CASIO HT Development Media Kit Quick Start Guide

(Version 1.01)

CASIO Computer Co., Ltd.

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Editorial Record

Manual			
Version	Date edited	Page	Content
no.			
1.00	March 2015	all	Original version
1.01	August 2015	35	In Chapter 5.1, the description of the license is corrected.
		13, 20,	IT-G500 WEC7 model is added.
		36, 79,	
		84, 86,	
		87, 89	
-			
	1	1	1

Preface

This guide clearly and concisely sets out the information developers need to know to get started with the CASIO Development Media Kit with the integrated Windows[®] Embedded CE OS development. The best methods of connecting to your development system are covered and step by step instructions for installing and testing the CASIO Development Kits are included.

The purpose of this guide is to get you to the point where you can start development; you should refer to the library manuals for detailed information on the specific APIs.

In this guide, the following name is mentioned by an abbreviation.

Abbreviation	Formal name
WEC7	Microsoft Windows Embedded Compact 7
WEH6.5	Microsoft Windows Embedded Handheld 6.5

1. Product Overview

1.1 Library Configuration

This product provides various libraries including those listed in the table.

Tabl	e 1	.1
1 401	• •	• •

Library	Description	C++	VB C#
System Library	Library that is used to control the system.	Yes	Yes
Laser Scanner Library	Library that is used to control the built-in laser scan engine.	Yes	Yes
Bluetooth Library	Library that is used to control the built-in Bluetooth module.	Yes	Yes
Camera Library	Library that is used to control the built-in CAMERA module.	Yes	Yes
Imager Library	Library that is used to control the built-in CMOS Imager.	Yes	Yes
NFC Library	Library that is used to control to communicate with IC card.	Yes	Yes
NFCMifare Library	Library that is used to control to communicate with MIFARE.	Yes	Yes
NFCFelica Library	Library that is used to control to communicate with FeliCa.	Yes	Yes
NFCHFTag Library	Library that is used to control to communicate with ISO15693	Yes	Yes
	tag.		
WANGPRS Library	Library that is used to control the built-in WANGPRS module.	Yes	Yes
JPEG Library	Library that is used to handle and manipulate JPEG image	Yes	-
	functions.		
FLINK Library	Library that is used to control and carry out transmission/reception	Yes	Yes
	of files between PC and other device.		

Note:

The abbreviations used in the table are;

C++ : Visual C++ VB : Visual Basic .NET

C# : Visual C# .NET

Table 1.2 shows each file name of the Dynamic Link Library and Dynamic Link Class Library.

Table	1.2
1 auto	1.4

Library	Dynamic Link Library	Dynamic Link Library (Class Library)
Common Device Control Library		
System Library	SystemLib.dll	SystemLibNet.dll
Laser Scanner Library	OBReadLib.dll	OBReadLibNet.dll
Bluetooth Library	BluetoothLib.dll	BluetoothLibNet.dll
Camera Library	CameraLib.dll	CameraLibNet.dll
Imager Library	ImagerLib.dll	ImagerLibNet.dll
NFC Library	NFCLib.dll	NFCLibNet.dll
NFCMifare Library	NFCMifareLib.dll	NFCMifareLibNet.dll
NFCFelica Library	NFCFelicaLib.dll	NFCFelicaLibNet.dll
NFCHFTag Library	NFCHFTagLib.dll	NFCHFTagLibNet.dll
WANGPRS Library	WangprsLib.dll	WangprsLibNet.dll
JPEG Library	JpegCe.dll	None
FLINK Library	FlinkLib.dll	MoFlinkLib.dll

1.2 Development Manuals

This product provides various development reference manuals as described in the table below.

Table 1.3	
Development Manual	Description
Quick Start Guide	This reference manual.
Device Library Base Manual	Reference manual that describes the functions list.
System Library Manual	Reference manual that describes individual functions in detail for System Library.
Laser Scanner Library Manual	Reference manual that describes individual functions in detail for Laser Scanner Library.
Bluetooth Library Manual	Reference manual that describes individual functions in detail for Bluetooth Library.
Camera Library Manual	Reference manual that describes individual functions in detail for Camera Library.
Imager Library Manual	Reference manual that describes individual functions in detail for Imager Library.
NFC Library Manual	Reference manual that describes individual functions in detail for NFC Library.
WANGPRS Library Manual	Reference manual that describes individual functions in detail for WANGPRS Library.
JPEG Library Manual	Reference manual that describes individual functions in detail for JPEG Library.
FLINK Library Manual	Reference manual that describes individual functions in detail for FLINK Library.

2. Prerequisites

2.1 Skills Required

The following skills are required by developers aiming to develop application software.

- Windows programming
- A good knowledge of one or more of the following
 - Visual C++
 - Visual Basic .NET
 - Visual C# .NET
 - Browser based applications (not covered in this guide)

The following skills or experience are also desirable.

- OS(WEC7, WEH6.5)
- Windows Mobile Device Center
- Some networking experience

2.2 System Required

OS

- Microsoft Windows 7 Professional 32bit with ServicePack1
- Microsoft Windows 7 Professional 64bit with ServicePack1

Hardware

- 2.4GHz or higher processor clock speed
- 768MB of RAM or higher
- 1024 x 768 or higher-resolution display

When using Device Emulator for WEC7, below is also required.

• 1024MB of RAM or higher

2.3 Software Required

The development platform, communication software and SDK provided by Microsoft are required in order to develop applications.

Absolutely necessary

- Microsoft Visual Studio 2008 + Service Pack 1 (not free of charge)
- Microsoft Windows Mobile Device Center 6.1 http://www.microsoft.com/downloads/details.aspx?familyid=46F72DF1-E46A-4A5F-A791-09F 07AAA1914&displaylang=en

The following updates are required for Visual Studio 2008 + Service Pack 1 to develop an application for WEC7.

(There is a possibility that following Uniform Resource Locator is changed.)

 Visual Studio 2008 update for Windows Embedded Compact 7 http://www.microsoft.com/en-us/download/details.aspx?id=11935 • Windows Embedded Compact 7 ATL Update for Visual Studio 2008 SP1 http://www.microsoft.com/en-us/download/details.aspx?id=27729

The following SDK is required for Visual Studio 2008 + Service Pack 1 to develop an application for WEH6.5.

• Windows Mobile 6 Professional SDK Refresh http://www.microsoft.com/en-us/download/details.aspx?id=6135

Optionally necessary

When using Device Emulator for WEC7, below is also required.

 Microsoft Windows Virtual PC http://www.microsoft.com/en-us/download/details.aspx?id=3702

3. Installing Development Kit for All Models

3.1 Application Development

This chapter explains about what you need to set up for the development environment before starting your application development.

3.1.1 Application Development for WEC7

- Installing Development Platform
 Install Microsoft's development platform which supports Visual Studio 2008. For detail, refer to
 Chapter 2.3 "Software Required".
- Installing Development Kit to PC Install ExportSDK and various libraries. For installation method, refer to Chapter 3.2 "Installing Development Kit".
- Connecting Device to PC (via Windows Mobile Device Center) Connect the device to PC via Windows Mobile Device Center. For connection method, refer to Chapter 4 "Connecting the Device to PC".
- Setting up the Development Environment Transmit the Casio's libraries to the device. For detail, refer to Chapter 5 "Installing Development Kit for Each Model".
- Installing the Device Emulator
 Install the Device Emulator for WEC7. For installation method, refer to Chapter 6 "Device Emulator". If not necessary to install, go to "6. Application Development" below.
- 6. Application Development

Now, the application development environment is set up and your development with the development platform can be started. After application is developed, transfer it to the Device Emulator or an actual terminal of the device via Windows Mobile Device Center for check on the operability. For application development method and transferring your application, refer to Chapter 7 "Visual Studio".

3.1.2 Application Development for WEH6.5

- Installing Development Platform
 Install Microsoft's development platform which supports Visual Studio 2008. For detail, refer to
 Chapter 2.3 "Software Required".
- Installing Development Kit to PC Install Microsoft's Windows Mobile 6 Professional SDK Refresh and Casio's Device Library. For installation method, refer to Chapter 3.2 "Installing Development Kit".
- Connecting Device to PC (via Windows Mobile Device Center) Connect the device to PC via Windows Mobile Device Center. For connection method, refer to Chapter 4 "Connecting the Device to PC".
- Setting up the Development Environment Transmit the Casio's libraries to the device. For detail, refer to Chapter 5 "Installing Development Kit for Each Model".
- Installing the Device Emulator
 Install the Device Emulator for WEH6.5. For installation method, refer to Chapter 6 "Device Emulator". If not necessary to install, go to "6. Application Development" below.
- 6. Application Development

Now, the application development environment is set up and your development with the development platform can be started. After application is developed, transfer it to the Device Emulator or an actual terminal of the device via Windows Mobile Device Center for check on the operability. For application development method and transferring your application, refer to Chapter 7 "Visual Studio".

3.2 Installing Development Kit

Download the Development Kit installation CD image file from the following site and write it to a CD-ROM media.

http://www2.casio.co.jp/system_en/pa/PADealer/

(The site requires your user name and password. Enter your user name and password as issued by CASIO.)

Notes:

• You must disable the User Account Control ("UAC") by following the process below before installing the Development Kit Files.

Case of using Windows 7

 Navigate to Control Panel -> User Accounts -> Change User Account Control Settings. Select Never notify in Choose when to be notified about changed to your computer setting.

When the Development Kit CD-ROM is inserted in the drive of PC, the following menu screen appears automatically. The version number in the menu screen is indicated according to the CD-ROM.



Figure 3.1

3.2.1 Installing ExportSDK

Please be sure to do the update indicated on Chapter 2.3 "Software Required" before install ExportSDK.

Table 3.1

ExportSDK	Device
CASIO ARMv5 ExportSDK	DT-X100 / DT-X200
CASIO ARMv7 ExportSDK	IT-G500 WEC7 Model

In this guide, Installation method of CASIO ARMv5 ExportSDK is explained.

1. Click on **Installation List** at First Install for All Models.



Figure 3.2

2. Click on CASIO ARMv5 ExportSDK.

II. Contraction of the second s	
HT Development Media Kit -,- Install for All Models -,-	Close
<casio exportsdk=""></casio>	
CASIO ARMV7 ExportSDK	7.0.0
Export ODY: for CASIC ADM/T Models.	
B CASIO ARMv5 ExportSDK	7.0.0
Export SUK for CASIU ARM/S Models.	
B CASIO x86 ExportSDK	7.0.0
Export SDK for Windows Embedded Compact 7 Device Emulator. (Opetion: Need for De	evice Emulator for Windows
Embedded Compact 7 Users)	
Embedded Compact 7 Users) <casio device="" library=""></casio>	3.0.2
Embedded Compact 7 Users) CASIO Device Library> GASIO HT Common Development Device Library Device Library For Application Development Which Runs in Microsoft Visual Studio 200	3.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT Common Development Device Library Device Library For Application Development Which Runs in Microsoft Visual Studio 200 for Each Model.)	3.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT Common Development Device Library CASIO HT Common Development Which Runs in Microsoft Visual Studio 200 for Each Model.) CASIO Device Emulator /> CASIO Device Emulator /> CASIO Device Emulator for Windows Embedded Compact.7 Visual PC Which Is A Tool That Allows Software Developer to Debug And Verly Applica	3.0.2 8. (Note : Need Device Librar) 1.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT. Common Development. Device Library Dorke Library For Application Development. Which Runs in Microsoft Visual Studio 200 for Each Model.) CASIO Device Emulator>	3.0.2 8. (Note : Need Device Librar) 1.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT_Common Development Device Library Conce Library For Application Development Which Runs in Microsoft Visual Studio 200 for Each Model) CASIO Device Emulator> CASIO Device Emulator for Windows.Embedded.Compact.I Visual PC Which Is A Tool That Allows Software Developer to Debug And Verify Applica on PC. (Note : Instat Windows Visual PC.)	8. (Note : Need Device Library 1.0.2 ation Program While Running 1.0.0

Figure 3.3

3. Press Next.



Figure 3.4

4. Agree to the software license and press Next.

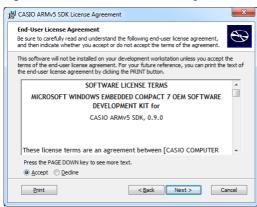


Figure 3.5

5. Enter the **User Name** and **Organization** and press **Next**.

	ARMv5 SDK Setup		×
	mer Information		
Plea	se enter your customer information		
	User Name:		
	casio		
	Organization:		
	casio		
		< Back Next >	Cancel

Figure 3.6

6. Select **Complete** for the **Choose Setup Type**.

B CASIO ARMv5 SDK S	etup
Choose Setup Type Choose the setup type	be that best suits your needs
¥.	Custom Allows users to choose which program features will be installed and where they will be installed. Recommended for advanced users. Complete All program features will be installed. (Requires most disk space)
	< Back Next > Cancel

Figure 3.7

7. Change the install destination if necessary and press **Next**. By default, the software is installed in the following locations.

32bit: C:\Program Files\Windows CE Tools\SDKs\CASIO ARMv5 64bit: C:\Program Files (x86)\Windows CE Tools\SDKs\CASIO ARMv5

👸 CASIO A	RMv5 SDK - Destination Folders
	ion Folders xt to install to this folder, or click Change to install to a different folder.
	Install CASIO ARMV5 SDK to: C:\Program Files (x86)\Windows CE Tools\SDKs\CASIO ARMv5\ Change
	< Back Next > Cancel

Figure 3.8

8. Press Install.

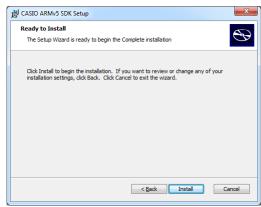


Figure 3.9

9. Press **Finish** when the install has finished.



Figure 3.10

3.2.2 Installing Device Library

1. Click on **Installation List** at First Install for All Models.



Figure 3.11

2. Click on CASIO HT Common Development Device Library.

di se	
HT Development Media Kit Install for All Models	Close
<casio exportsdk=""></casio>	
CASIO ARMv7 ExportSDK	7.0.0
Export SDK for CASIO ARM/7 Models.	
CASIO ARMv5 ExportSDK	7.0.0
Export SDK for CASIO ARM/5 Models.	
B CASIO x86 ExportSDK	7.0.0
Export SDK for Windows Embedded Compact 7 Device Emulator. (Opetion: Need for De Embedded Compact 7 Users)	evice Emulator for Windows
Embedded Compact 7 Users)	avice Emulator for Windows
Embedded Compact 7 Users)	
Embedded Compact 7 Users)	3.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT.Common Development Device Library Casio Hind Soft Visual Studio 200 for Each Model) CASIO Device Emulator>	3.0.2 8. (Note : Need Device Library
Embedded Compact 7 Users) CASIO Device Library> CASIO TL Common Development Device Library Device Library Env Apriliantian Development Which Dues in Mice Soft Visual Studio 200 for Each Model CASIO Device Emulator> CASIO Device Emulator for Windows Embedded Compact Z	3.0.2 8. (Note : Need Device Library 1.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT. Common Development Device Library CASIO HT. Common Development Which Device Library for Each Model) CASIO Device Emulator for Windows Embedded Compact I Virtual PC Which Is A Tool That Allows Software Developer to Debug And Verify Applica on PC. (Note : Instat Windows Virtual PC.)	3.0.2 8. (Note : Need Device Library 1.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT.Common Development Device Library Casio Hind Soft Visual Studio 200 for Each Model) CASIO Device Emulator>	3.0.2 8. (Note : Need Device Library 1.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT.Common Development Device Library CASIO Device Emulatoria CASIO Device Emulatoria CASIO Device Emulator for Windows Embedded Compact Z Virtual PC Which Is A Tool That Allows Software Developer to Debug And Verify Applica on PC. (Net : Instal Windows Virtual PC.)	3.0.2 8. (Note : Need Device Library 1.0.2 ation Program While Running 1.0.0

Figure 3.12

3. Press Next.



Figure 3.13

4. Agree to the software license and press Next.



Figure 3.14

5. Enter the User Name and Organization and press Next.

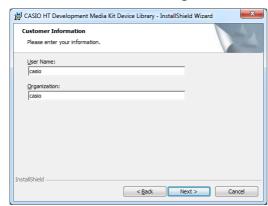


Figure 3.15

6. Select **Complete** for the **Setup Type**.

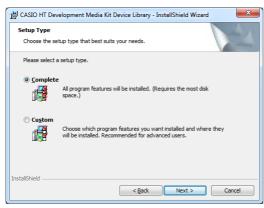


Figure 3.16

7. Press Install.

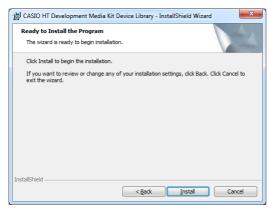


Figure 3.17

8. Press **Finish** when the install has finished.

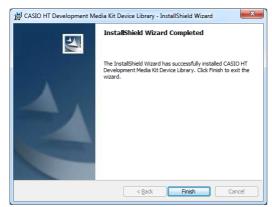


Figure 3.18

3.2.3 Setting the Device Library Path

Set the device library Path for the ExportSDK.

The following describes the procedure to set the Path for the CASIO ARMv5 ExportSDK.

1. Navigate to **Tools** -> **Options** from the Visual Studio 2008 menu and select **VC++ Directory** under **Projects and Solutions**.

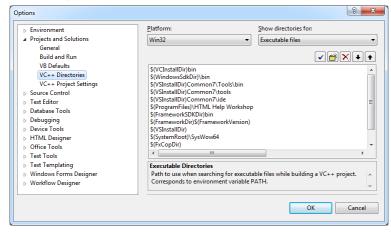


Figure 3.19

 Select CASIO ARMv5 (ARMv4I) for the platform and Include files for the project to display the directory. (Select Windows Mobile 6 Professional SDK (ARMv4I) / CASIO ARMv5 (ARMv4I) if you are using the Windows Mobile 6 Professional SDK / CASIO ARMv7 ExportSDK)

Environment	<u>P</u> latform:	Show directories for:
Projects and Solutions	CASIO ARMv5 (ARMv4I)	▼ Include files
General		
Build and Run		↓ X 1
VB Defaults	\$(VCInstallDir)ce\include	
VC++ Directories		ows CE Tools\SDKs\CASIO ARMv5\include\ARMv4I
VC++ Project Settings		ows CE Tools\SDKs\CASIO ARMv5\include
Source Control	\$(VCInstallDir)ce\atImfc\incl	
Text Editor	\$(VSInstallDir)SmartDevices\	SDK\SQL Server\Mobile\v3.0
Database Tools		
Debugging		
Device Tools		
HTML Designer		
Office Tools		
	•	
Test Tools	Include Directories	
Test Tools Text Templating		for include files while building a VC++ project.
Text Templating	Path to use when searching Corresponds to environmen	

Figure 3.20

3. Register the folder installed in Section 3.2.2 "Installing Device Library" as shown in the figure below.

ons	8
Environment Projects and Solutions General Build and Run	Platform: Show directories for: CASIO ARMv5 (ARMv4I) ✓ Include files
VB Defaults VC++ Directories VC++ Project Settings Source Control Text Editor Database Tools Debugging Device Tools HTML Designer Office Tools	CAProgram Files (x86)\CASIOMBSys\INCLUDE \$VCInstallDirjce\include CxProgram Files (x86)\Windows CE Tools\SDKs\CASIO ARMv5\include\ARMv4I CxProgram Files (x86)\Windows CE Tools\SDKs\CASIO ARMv5\include S(VCInstallDirjce\atImfc\include \$(VCInstallDirjSmartDevices\SDK\SQL Server\Mobile\v3.0
Test Tools	< <u> </u>
Text Templating Windows Forms Designer Workflow Designer	Include Directories Path to use when searching for include files while building a VC++ project. Corresponds to environment variable INCLUDE.

32bit: C:\Program Files\CASIO\MBSYS\INCLUDE

Figure 3.21

4. Select **Library files** for the project to display the directory.

Environment	Platform: Show directories for:
Projects and Solutions	CASIO ARMv5 (ARMv4I)
General	
Build and Run	
VB Defaults	C:\Program Files (x86)\Windows CE Tools\SDKs\CASIO ARMv5\lib\ARMv4I
VC++ Directories	\$(VCInstallDir)ce\atImfc\lib\ARMv4I
VC++ Project Settings	\$(VCInstallDir)ce\lib\ARMv4I
Source Control	
Text Editor	
Database Tools	
Debugging	
Device Tools	
HTML Designer	
Office Tools	
Test Tools	<
Text Templating	Library Directories
Windows Forms Designer	Path to use when searching for library files while building a VC++ project.
Workflow Designer	Corresponds to environment variable LIB.

Figure 3.22

5. Register the folder installed in Section 3.2.2 "Installing Device Library" as shown in the figure below.

32bit: C:\Program Files\CASIO\MBSYS\LIB\ARMV5 64bit: C:\Program Files (x86)\CASIO\MBSYS\LIB\ARMV5

Register the following folder if you are using the **Windows Mobile 6 Professional SDK**. 32bit: C:\Program Files\CASIO\MBSYS\LIB\ARMV4I 64bit: C:\Program Files (x86)\CASIO\MBSYS\LIB\ARMV4I

Register the following folder if you are using the **CASIO ARMv7 ExportSDK**. 32bit: C:\Program Files\CASIO\MBSYS\LIB\ARMV7 64bit: C:\Program Files (x86)\CASIO\MBSYS\LIB\ARMV7

Options		? <mark>×</mark>
Environment	Platform:	Show directories for:
Projects and Solutions	CASIO ARMv5 (ARMv4I)	▼ Library files
General Build and Run		
VB Defaults		
VB Defaults VC++ Directories	C:\Program Files (x86)\CASI	
VC++ Directories VC++ Project Settings		ows CE Tools\SDKs\CASIO ARMv5\lib\ARMv4I
Source Control	\$(VCInstallDir)ce\atImfc\lib\ \$(VCInstallDir)ce\lib\ARMv4	
Text Editor	S(VCIIIStallDir)CC(IID (ARTIVIA	•
Database Tools		E
Debugging		
Device Tools		
HTML Designer		
Office Tools		T
Test Tools	<	
Text Templating	Library Directories	
Windows Forms Designer		for library files while building a VC++ project.
Workflow Designer	Corresponds to environmen	it variable LIB.
		OK Cancel

Figure 3.23

4. Connecting the Device to PC

4.1 Installing Windows Mobile Device Center

- 1. Download the Windows Mobile Device Center Installer to your PC from Microsoft's web site.
- 2. Run the installer.
- 3. A progress window of installation is displayed. When windows is closed, installation is completed.

The following describes the communication method for connecting device to PC. There is 3 kinds of communication method.

Change the setting according to communication method you will use.

4.2 Connection via USB

To establish connection via USB interface with PC runs in Windows 7, use Windows Mobile Device Center ("WMDC"). The device with the factory-setting (default) does not support the WMDC. Follow the procedure below to change the setting on the device.

Procedure

- 1. Close all applications running on the device.
- 2. Start USB Connection.

In case of WEC7, navigate to **Settings** -> **Control Panel** -> **USB Connection**. In case of WEH6.5, navigate to **Settings** -> **System** -> **USB Connection**.

3. Click **Connect Utility** tab.

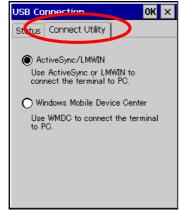
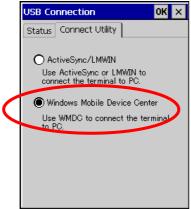


Figure 4.1

4. Choose **Windows Mobile Device Center** radio button and then click **OK** button.





5. A dialogue asking your final confirmation appears. Click **YES** button.



Figure 4.3

- 6. The device starts up again.
- 7. Mount the device on the cradle, and then follow a message appeared in the WMDC on the PC.

4.3 Connection via WLAN

To establish communication between the device with the WLAN module integrated and PC via WLAN configuration, follow the steps, 1 to 7, below to set up a WLAN configuration on the device. After setting up the configuration, be sure to perform a site survey prior to starting communication via WLAN.

1. Turn on WLAN power.

In case of WEC7, navigate to Start -> Settings -> Control Panel -> WLANConfig and then check on WLAN Power Enable.

In case of WEH6.5, navigate to **Start** -> **Settings** -> **System** -> **WLAN Power** and then check on **WLAN Power**.



Figure 4.4

2. Start WLANConfig.

In case of WEC7, navigate to **Start** -> **Settings** -> **Control Panel** -> **WLANConfig** and then click **IP** tab.

In case of WEH6.5, navigate to Start ->	Settings -> System ->	WLAN Settings and th	en
click IP tab.			

WLANConfig OK 🗙				
Basic IP	WLAN Deta	il		
Enable DHCP O Configure IP				
IP:		100 C		
MASK:				
GateWay:				
DNS1:				
DNS2:				
WINS1:				
WINS2:				
OK Cancel				

Figure 4.5

Table 4.1

Parameter	Description
Enable DHCP or Configure IP	Determines "Enable" or "Disable" for DHCP.
IP	Determines IP address.
MASK	Determines subnet mask.
GateWay	Determines default gateway.
DNS1	Determines primary DNS address.
DNS2	Determines secondary DNS address.
WINS1	Determines primary WINS address.
WINS2	Determines secondary WINS address.

If any of the settings in Figure 4.5 is omitted, the process described in the following table will automatically take place in the field.

Parameter	Nothing is set (DHCP)	"Configure IP" is set
Enable DHCP or	"Enable DHCP" is assumed.	"Configure IP" is set.
Configure IP		
IP	Does not determine IP address.	Entered address is set as is.
MASK	Does not determine subnet mask.	Entered address is set as is.
GateWay	Does not determine gateway.	Entered address is set as is.
DNS1	Does not determine primary DNS address.	Entered address is set as is.
DNS2	Does not determine secondary DNS address.	Entered address is set as is.
WINS1	Does not determine primary WINS address.	Entered address is set as is.
WINS2	Does not determine secondary WINS	Entered address is set as is.
	address.	

Table 4.2

3. Click **Basic** tab. Set up each parameter in the tab by referring to the descriptions for the parameters in Table 4.3.

					-	
WLAN	Cont	fig			0K	×
Basic	IP	WLAP	V Î De	tail		
SSID:					Sea	rch
_ □ ⊤ ₅Secur		an adh	oc ne	twork.		
		• •	WEP	O WP	A	
Authe O		ation —				
	-	: 🔘 12	28 bit	O 64	1 bit	_
Key (H Key In			\cap	Оз	<u> </u>	
		OK I][Cancel		

Figure 4.6

Table 4.3

Parameter		Description
SSID		Enter the SSID of the network you want to connect to.
Security	Disable	None.
_	WEP	Open in Authentication field.
	WPA	PSK in Authentication field (if selected, the Key field must be set also.)
		EAP-PEAP in Authentication field
		EAP-TLS in Authentication field
Key		Enter 26 (maximum) alphanumeric digits (13 hex pairs) in the Key field if 128 bit radio button is selected. Or, enter 10 (maximum) alphanumeric digits (5 hex pairs) in the Key field if 64 bit radio button is selected.
		The field displays the number of characters that have been entered. ***** in the field implies that the key has been extracted from the ini file. If ***** in the field is edited, a new key has been deemed to be set. Or, if it has never been edited, the key extracted from the ini file becomes effective as is.

If **EAP-PEAP** radio button in Authentication field is selected, click the **EAP-Properties** button that appears when selecting the **EAP-PEAP** radio button to set also the following parameters. Table 4.4

Parameters in EAP-Properties screen	Description	Default
User name	Input a user name in alphanumeric (maximum 100 alphanumeric).	None
Password	Input a password in alphanumeric (maximum 100 alphanumeric).	None
	***** in the field implies that the password has been extracted from the ini file. If ***** in the field is edited, a new password has been deemed to be set. Or, if it has never been edited, the password extracted from the ini file becomes effective as is.	
Domain	Input a domain in alphanumeric (maximum 100 alphanumeric).	None
Validate server certificate	Set up the requisition for server certificate. With check mark : certificate is required. Without check mark: certificate is not required.	Certificate is not necessary

If **EAP-TLS** radio button in Authentication field is selected, click the **EAP-Properties** button that appears when selecting the **EAP-TLS** radio button to set the following settings.

Table 4.5	Ta	ble	4.5
-----------	----	-----	-----

Parameters in EAP-Properties screen	Description	Default
User name	Input a user name in alphanumeric (maximum 100	None
	alphanumeric).	
Certificate	Select a client certificate installed already (maximum 100 alphanumeric).	None
	Search button in the field will display a list of installed client certificates. Select one by highlighting it.	
Domain	Input in alphanumeric (maximum 100 alphanumeric)	None
Validate server	Set up the requisition for server certificate.	Certificate is required.
certificate	With check mark : certificate is required.	
	Without check mark : certificate is not required.	

4. Click WLAN tab.

WLANConf	ig		ок 🗙
Basic	WLAN	Detail	
Power:	🔘 On	Ooff	
Save:	🔘 Enabl	le 🔿 Disa	able
Standard:	Ob 👘	🔿 b/g	
	🔿 abg	🔿 bgr	n 🔿 a/n
	🖲 abgn		
RSSI Level			
$ \subseteq$ roaming		efault 🕻	· -
🔘 Value	- 78	dBm (-1	to -200)
FBand priorit	:y		
Priority: 🔘) None (C) 2.4GHz	🔿 5GHz
Range:	-78 + 🛛	0 d	Bm over
	эк 🛛	Cano	:el

Figure 4.7

Table 4.6

Field / Radio Buttons		Description	Default
Power	On	Enable power to the integrated WLAN module.	Yes
	Off	Disable power to the integrated WLAN module.	
Save	Enable	Enable power save mode for the WLAN module.	Yes
	Disable	Disable power save mode for the WLAN module.	
Standard		Set up IEEE802.11 standard effect.	Abgn
RSSI Level for	No roaming	Set up "-100 dBm" for roaming starting threshold level, a	
initiating roaming		level where communication via WLAN is practically	
		impossible, so that roaming should not be carried out.	
	Default	Set up "-78 dBm" for the roaming starting threshold level.	Yes
	High	Set up "-72 dBm" for roaming starting threshold level, for	
		faster (more frequent) roaming	
	Value	Set up roaming starting threshold level manually.	
Band priority	None	Automatic switching to the highest strength network in	Yes
		2.4GHz or 5GHz.	
	2.4GHz	Automatic switching to 2.4GHz if a network that is	
		stronger than Range value is found.	
	5GHz	Automatic switching to 5GHz if a network that is stronger	
		than Range value is found.	

5. Click Detail tab.

WLANConfig	ок 🗙
Basic IP WLAN	Detail
[WLAN configure / St	
WLANConfig / Ne	etSearch
🔘 WLANConfig / Ne	ətUI
🔿 NetUI / Ne	ətUI
Enable adhoc ne	twork setting.
🔲 Enable all authen	ntication settings.
Inifile comment:	
I	
Advance Settings	Version
OK	Cancel

Figure 4.8

Field / Rad	lio Buttons	Description	Default
WLAN configure, Status display tool	WLANConfig, NetSearch WLANConfig, NetUI	 Use only CASIO provided WLAN tool. Configure WLAN setting with settings extracted from the ini file. Initiate NetSearch when tapping the icon in the task tray. Use both CASIO provided WLAN tool and MS tool. Configure WLAN setting with settings extracted from the ini file. Initiate NetUI (MS tool) when tapping the icon in the task tray. Use only the MS tool. Configure WLAN setting, not with settings extracted from the ini file. Initiate NetUI (MS tool) when tapping the icon in the task tray. Use only the MS tool. Configure WLAN setting, not with settings extracted from the ini file. Initiate NetUI when tapping the icon in the task tray. 	Yes
Enable adhoc network	setting	will be deleted. Only the WLAN configuration set with NetUI is saved. With check mark : enable the setting.	
		Without check mark : disable the setting.	Yes
Enable all authenticati	on settings	With check mark : enable the setting.	
		Without check mark : disable the setting.	Yes
Inifile comment		Enter a comment of up to 100 characters to be written in the ini file.	None

6. If **OK** button in the popup warning message (see Table 4.7 for description of NetUI/NetUI radio button) is clicked, the screen in Figure 4.9 appears. Click **OK** button to perform a reset on the terminal so that the setting takes effect.

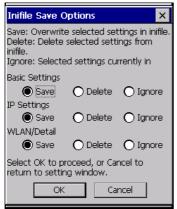


Figure 4.9

7. Check to make sure that the connection has been established using the **NetSearch** utility, and then navigating to the **Ping** function in there. Enter HostName first and then click **Ping** to check that you are connected to the network correctly.

4.4 Connection via Ethernet Cradle

This chapter describes how to establish a high speed LAN connection.

- 1. Connect the dedicated AC adapter to the Ethernet cradle.
- 2. Connect one end of the network cable to the Ethernet cradle and the other end to the network hub.
- 3. Make sure the selector switch on the back of the Ethernet cradle is set to the position LAN.

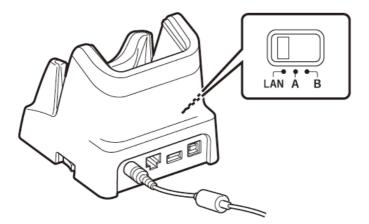


Figure 4.10

- 4. Place the device in the cradle.
- 5. Navigate to Settings -> Control Panel -> Network and Dial-up Connections on the device.
- 6. The following screen appears. Double click the **AX887721** icon. The icon will not appear unless the terminal is placed in the cradle.





4.5 Accessing Shared Network Drive on Your LAN

Assuming you have a valid network connection established, you can access shared drives on your PC from the **File Explorer** on the device. The following shows the steps to initiate this. This access is supported only in WEC7.

Procedure in WEC7

- 1. Configure a network connection on the device.
- 2. Double click My Device.
- 3. Navigate to View -> Address Bar.
- 4. Type $\langle xxxx \rangle$ where xxxx is the network name of the PC.
- 5. A network logon dialog box will appear. Enter a valid User ID, Password and Network Domain.
- 6. Any shared network drives on the target PC will be displayed and you will be able to copy files freely between them and the device.

4.6 Direct TCP/IP Connection from Visual Studio

If you have a network connection to the device (for example, via WLAN or the Ethernet cradle) then you can establish a direct link to the development PC without using Windows Mobile Device Center.

For Visual Studio 2008

1. Download the files listed below to the device.

- Clientshutdown.exe
- ConmanClient2.exe
- CMAccept.exe
- DeviceDMA.dll
- eDbgTL.dll
- TcpConnectionA.dll

The source folder in the PC:

 $C:\Program Files\Common Files\Microsoft Shared\CoreCon\1.0\Target\wce400\armv4i The destination folder in the device:$

\Windows

- 2. Run **ConmanClient2.exe** on the device.
- 3. Set the device IP address in Visual Studio 2008.
- Navigate to Tools in the main menu of Visual Studio 2008 -> Options... -> Device Tools -> Devices.
- 5. Choose **Device** in the pull-down menu of **Devices:** and click **Properties...**.
- 6. Click **Transport:** to access **Configure...** and set up **Device IP address** as shown in Figure 4.12.

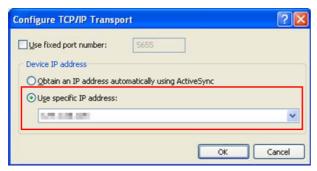


Figure 4.12

- 7. Run CMAccept.exe on the device.
- 8. Navigate to **Tools** in the main menu of Visual Studio 2008 -> **Connect to Device...**.

9. Choose **Device** in the list of **Devices:** and click **Connect** button. The screen in Figure 4.13 if appear indicates the success of connection establishment.



Figure 4.13

5. Installing Development Kit for Each Model

5.1 Installing Device Library for Each Model

After installing Device Library for Each Model, the CAB files in Table 5.1 will be installed in the folder below.

The contents of CAB files

CAB files are installed in the following folder by default. Following AAA is model name. 32bit: C:\Program Files\CASIO\MBSYS\CAB\AAA 64bit: C:\Program Files (x86)\CASIO\MBSYS\CAB\AAA

The run-time library described on the following table is stocked in CAB files. Following AAA is model name, BBB is OS name, and CCC is version information. The name of cab file which install System Library Version 3.01 to IT-G500 is SystemLibITG500WEHE.301.CAB.

Library	CAB file
System Library	SystemLib[AAABBB]E.[CCC].CAB
Laser Scanner Library	OBReadLib[AAABBB]E.[CCC].CAB
Bluetooth Library	BluetoothLib[AAABBB]E.[CCC].CAB
Camera Library	CameraLib[AAABBB]E.[CCC].CAB
Imager Library	ImagerLib[AAABBB]E.[CCC].CAB
JPEG library	JpegCe[AAABBB]E.[CCC].CAB
FLINK library	Flink[AAABBB]E.[CCC].CAB
NFC Library	NFCLib[AAABBB]E.[CCC].CAB
WANGPRS Library	WANGPRSLib[AAABBB]E.[CCC].CAB

Notes:

- 1. When using Device Emulator, these CAB files are already installed. So it is not necessary to install these files.
- 2. The name of CAB file and the kind depend on the model.
- 3. About the library available on each model, refer to **Device Library Base Manual**.

Installation procedure

In this guide, the following describes the procedure to install Device Library for **DT-X200** to device.

(1) Installing to PC

Click on Installation List at Second Install for Each Model.



Figure 5.1

Click on CASIO HT Development Media Kit Device Library for DT-X200.

dl	
HT Development Media Kit -,- Install for Each Model -,-	Close
<it-g500 6.5="" embedded="" handheld="" windows=""></it-g500>	
B CASIO HT Development Media Kit Device Library for IT-G500WEH	3.0.1
IT-G500 WEH Device Library For Application Development Which Runs in Microsoft Visual Studio 2 Device Library for All Models.)	008. (Note : Need
< IT-G500 Windows Embedded Compact 7>	
B CASIO HT Development Media Kit Device Library for IT-G500WEC	3.0.1
IT-G500 WEC Device Library For Application Development Which Runs in Microsoft Visual Studio 2 Device Library for All Models.)	008. (Note : Need
CDevice Library for All Models.) CDT-X100>	3.0.2
Device Library for All Models.)	3.0.2
Device Library for All Models.) SDT-X100> IP CASIO HT Development Media Kit Device Library for DT-X100 DTX:100 Device Library For Application Development Which Runs in Microsoft Visual Studio 2008. (Device Library for All Models.) ST X200> IP CASIO HT Development Media Kit Device Library for DT-X200	3.0.2 Note : Need
Device Library for All Models.) CT-X100>	3.0.2 Note : Need

Figure 5.2

Press Next.

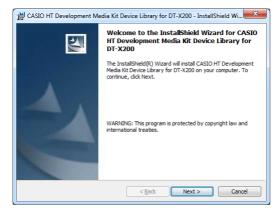


Figure 5.3

Agree to the software license and press Next.

谩 CASIO HT Development Media Kit Device Library for DT-X200 - InstallShield Wi	×
License Agreement Please read the following license agreement carefully.	
End-User Software License Agreement	^
DO NOT INSTALL AND USE THIS PROGRAM, DOCUMENTATION AND OTHER MATERIALS ENCLOSED (COLLECTIVELY, "Software") UNTIL YOU HAVE CAREFULLY READ THE AGREEMENT OF CASIO GIVEN BELOW ("CASIO AGREEMENT").	
INSTALLING AND USING THE Software WILL CONSTITUTE YOUR ACCEPTANCE OF THE TERMS AND CONDITIONS OF CASIO AGREEMENT.IF	- -
I accept the terms in the license agreement	
\bigcirc I $\underline{d}o$ not accept the terms in the license agreement	
InstallShield	
< Back Next > Cance	:

Figure 5.4

Enter the User Name and Organization and press Next.

岁 CASIO HT Development Media Kit Device Library for DT-X200	- InstallShield Wi
Please enter your information.	
User Name:	
casio	
Organization:	
casio	
Install this application for:	
Anyone who uses this computer (all users)	
Only for <u>me</u> (casio)	
InstallShield	t > Cancel

Figure 5.5

Select Complete for the Setup Type, press Next.

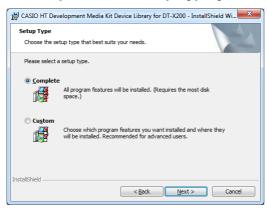


Figure 5.6

Press Install.

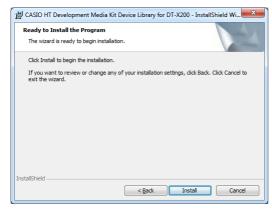


Figure 5.7

Press **Finish** when the install has finished.



Figure 5.8

(2) Transmission of a CAB file

Transfer each CAB file to any folder on DT-X200 by Windows Mobile Device Center.

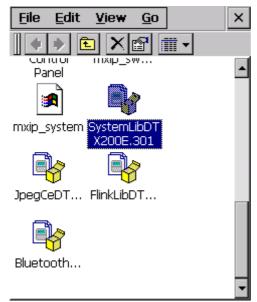


Figure 5.9

Notes:

- In this guide, CAB file is placed on root folder of DT-X200.
- For use method of Windows Mobile Device Center, refer to Chapter 4 "Connecting the Device to PC".

(3) Installation of a CAB file

Execute transmitted CAB file.

Install CASIO 🗈 💣 🛛 🗙
🔍 \Temp
ModelSetup
WianError
WLANLOG
Name: ServicePack
-
Input Panel
Esc 1 2 3 4 5 6 7 8 9 0 - = 🗲
Tab[q]w]e]r]t]y]u]i]o[p][]]
CAP a s d f g h j k ;
Shift z x c v b n m , . / ←
[Ctl]áü]`]\] [↓]↑[←]→

Figure 5.10

Press Enter Key on hardware or software keyboard.

(4) Installation completion



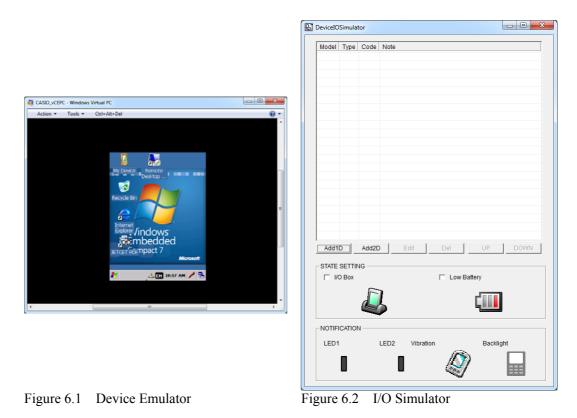
Figure 5.11

- In this guide, Installation of System Library is described for example. Also install other libraries by the same procedure.
- If you execute Full Reset on device, install again.

System Library becomes available by the above mentioned procedure.

6. Device Emulator

Device Emulator provides to application developers as "an environment which enables the confirmation of basic application behavior and source-level debugging without the actual device".



6.1 Device Emulator for WEC7

6.1.1 Installing ExportSDK

1. Click on **Installation List** at First Install for All Models.



Figure 6.3

2. Click on CASIO x86 ExportSDK.

11	
HT Development Media Kit -,- Install for All Models -,-	Close
<casio exportsdk=""></casio>	
B CASIO ARMV7 ExportSDK	7.0.0
Export SDK for CASIO ARM/7 Models.	
B CASIO ARMv5 ExportSDK	7.0.0
Export SDK for CASIO ARM/5 Models.	
CASIO x86 ExportSDK	7.0.0
Expert ST6K for Windows Embedded Compart 7 Device Emulator. (Opetion: Need for Embedded Compact 7 Users)	Device Emulator for Windows
Embedded Compact 7 Users)	Device Emulator for Windows 3.0.2
Embedded Compact 7 Users) <casio device="" library=""></casio>	3.0.2
Embedded Compact 7 Users)	3.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT-Common Development Device Library Device Library ForrApplication Development Which Runs in Microsoft Visual Studio 20 for Each Model.) CASIO Device Emulator>	3.0.2 008. (Note : Need Device Library 1.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT Common Development Device Library Device Library For Application Development Which Runs in Microsoft Visual Studio 20 for Each Model.) CASIO Device Emulator> CASIO Device Emulator for Windows Embedded Compact Z Vitual PC Which is A Tool That Allows Software Developer to Debug And Verify Appli	3.0.2 008. (Note : Need Device Library 1.0.2
Embedded Compact 7 Users) CASIO Device Library> CASIO HT_Common Development Device Library Device Library For Application Development Which Runs in Microsoft Visual Studio 20 for Each Model.) CASIO Device Emulator for Windows Embedded Compact Z Vatual PC Which Is A Tool That Allows Software Developer to Debug And Verify Appli on PC. (Nate: Intall Windows Vatual PC.)	3.0.2 008. (Note : Need Device Library 1.0.2 ication Program While Running 1.0.0

Figure 6.4

3. Press Next.



Figure 6.5

4. Agree to the software license and press Next.

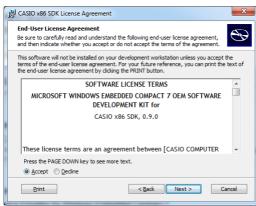


Figure 6.6

5. Enter the User Name and Organization and press Next.

	O x86 SDK Setup omer Information		
Ple	ase enter your customer informati	ion	B
	User Name:		
	casio		
	Organization:		
	casio		
		< Back Next >	Cancel

Figure 6.7

6. Select **Complete** for the **Choose Setup Type**.

皮 CASIO x86 SDK Setup	, ×
Choose Setup Type Choose the setup type	be that best suits your needs
i.	Custom Allows users to choose which program features will be installed and where they will be installed. Recommended for advanced users. Complete All program features will be installed. (Requires most disk space)
	< Back Next > Cancel

Figure 6.8

- 7. Change the install destination if necessary and press **Next**. By default, the software is installed in the following locations.
 - 32bit : C:\Program Files\Windows CE Tools\SDKs\CASIO x86

64bit : C:\Program Files (x86)\Windows CE Tools\SDKs\CASIO x86

B CASIO x	86 SDK - Destination Folders	X
	ion Folders xt to install to this folder, or click Change to install to a different fold	ler.
	Install CASIO x86 SDK to: C:\Program Files (x86)\Windows CE Tools\SDKs\CASIO x86\	Change
	< Back Next >	Cancel



8. Press Install.

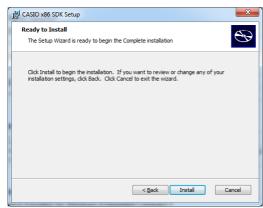


Figure 6.10

9. Press **Finish** when the install has finished.

B CASIO x86 SDK Setup	×
Ð	Completing the CASIO x86 SDK Setup Wizard
	Click the Finish button to exit the Setup Wizard.
	< Back Finish Cancel

Figure 6.11

6.1.2 Installing Device Library

Installing the development kit device library also installs the VirtualPC device library. Refer to Section 3.2.2 "Installing Device Library" for details about the installation method.

6.1.3 Installing Device Emulator

Install the **Windows Embedded Compact 7 Emulator Image for CASIO**. VirtualPC is located in the following directory in CD-ROM. SETUP\COMMON\DEVICEEMULATOR\VIRTUALPC

- 1. Copy the VirtualPC folder above to an arbitrary directory on your PC. This guide uses the example of copying the folder to C:\DT-X200\.
- 2. Navigate to Windows Virtual PC from the Start menu and select Create virtual machine.

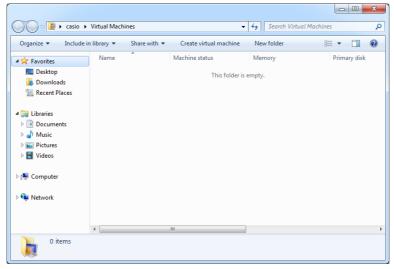


Figure 6.12

3. Enter the **Name** and **Location** and press **Next**. The name in this example is **CASIO_vCEPC**.

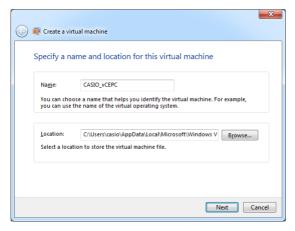


Figure 6.13

 Enter a value of 256 MB or greater for the RAM, check the Use computer network connection option and press Next. By changing this value, Storage memory and Program memory are changed in Device Emulator.

3 🖷	Create a virtual machine
S	pecify memory and networking options
	Memory
	<u>R</u> AM: 512 MB
	You can specify an amount from 4 MB through 3,712 MB. Specify the memory as per the requirements of the operating system you plan to install on the virtual machine.
	Networking
	Use computer network connections
	You can use this option to connect the virtual machine to an external network. Clear this checkbox to keep the virtual machine disconnected from the network.
	More about managing memory
	More about networking and virtual machines
	Next Cancel

Figure 6.14

5. Select the CASIO_vCEPC_E.vhd created in step 1 as the Location for Use an existing virtual hard disk and press Create.

WQVGA	: CASIO	vCEPC	WQVGA	E.vhd
Other resolutions	: CASIO	vCEPC	E.vhd	

🕝 🗐 Create a virtua	I machine
Add a virtual	hard disk
Create a <u>dynar</u>	nically expanding virtual hard disk
Na <u>m</u> e:	CASIO_vCEPC
Location:	C:\Users\casio\AppData\Local\Microsoft\Windows \ Browse
Ose an <u>existing</u>	g virtual hard disk
Loca <u>t</u> ion:	C:\DT-X200\VirtualPC\CASIO_vCEPC_E.vhd Browse
Cre <u>a</u> te a virtua	I hard disk using advanced options
Enable <u>U</u> ndo I	Disks
More about using	g Undo Disks
	Create Cancel

Figure 6.15

6. Select the **CASIO_vCEPC.vmcx** created in step 5 and press **Settings**.

Organize 🔻 🛛 🧰 Open	 Share with 	Burn Settings Cr	reate virtual machine »	· · · · · · · · · · · · · · · · · · ·
🔆 Favorites	Name	Machine status	Memory	Primary disk
🧮 Desktop	CASIO_vCEPC	Powered down	512 MB	C:\DT-X200\Virtua
🚺 Downloads				
🕮 Recent Places				
🤭 Libraries				
Documents				
J Music				
Pictures				
Videos				
La videos				
Computer				
I Computer				
I Computer				
I Computer				

Figure 6.16

7. Select the CASIO_FLASHDISK_E.vhd item installed in step 1 for Hard Disk 2 and press OK.

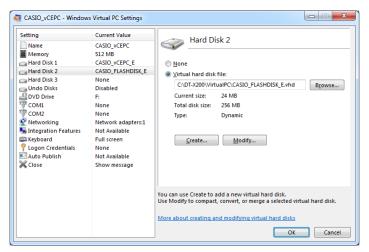


Figure 6.17

6.1.4 Starting Up Device Emulator

Start up the **CASIO VirtualPC**.

1. Double click the **CASIO_vCEPC.vmcx** created in Section 6.1.3 "Installing Device Emulator" to display the screen below.

🦥 CASIO_vCEPC - Windows Virtual PC	- 0 X
Action Tools Ctrl+Alt+Del	• (9)
Microsoft Windows CE XLDR Version 1.0 (Built Dec 28 2014 13:03:21) Microsoft Windows CE Boot Loader Version 1.3 (Built Dec 28 2014 13: 511MB, VRAM 4MB, PCI Extension 2.10, EDD Services 3.0, VESA 2.0, AI 2	
Hit space to enter configuration menu 5 Hit space to enter configuration menu 4 Hit space to enter configuration menu 3 Hit space to enter configuration menu 1 Hit space to enter configuration menu 1	

Figure 6.18

2. Device Emulator will launch after a brief wait. (The software may take several minutes to start up depending on the environment.)



Figure 6.19

6.1.5 Relating ExportSDK to Device Emulator

Relate CASIO x86 SDK installed in Section 6.1.1 "Installing ExportSDK" to Device Emulator.

1. While referring to section 6.1.4 "Starting Up Device Emulator", start Device Emulator, double-click the icon on the taskbar and skip the **IP address**.

PCI\DC21X41 OK ×
IP Information IPv6 Information
[Internet Protocol (TCP/IP)
Address Type: DHCP
IP Address:
129.1.60.82
Subnet Mask:
255.255.255.0
Default Gateway:
129.1.60.200
<u>R</u> enew <u>Details</u>
教 PCI\DC21 🕹 💽 1:47 PM 🥖 😤

- Figure 6.20
- 2. Navigate to **Tools** -> **Options** from the Visual Studio 2008 menu and select **Devices** from the **Device Tools**.

Options	
Environment Projects and Solutions Source Control Detabase Tools Debugging Debugging Device Tools General Devices Form Factors HTML Designer Office Tools Text Templating Windows Forms Designer Workflow Designer	Show devices for platform: All Platforms Degices: CASIO 366 Device Pocket PC 2003 DE Vice Pocket PC 2003 DE Emulator Pocket PC 2003 SE Emulator Pocket PC 2003 SE Square Emulator Pocket PC 2003 SE Square VGA Emulator Pocket PC 2003 SE Square VGA Emulator Smartphone 2003 SE Emulator Smartphone 2003 SE Emulator USA Windows Mobile 5.0 Pocket PC R2 Emulator USA Windows Mobile 5.0 Pocket PC R2 Emulator Default device: v
	OK Cancel

Figure 6.21

3. Select CASIO x86 Device from the device list and press Properties.

Environment	Show devices for platform:
Projects and Solutions Source Control	All Platforms
Text Editor	De <u>v</u> ices:
Database Tools Debugging	CASIO ARMv5 Device Automatic Asilo x86 Device Save As
Device Tools General	Pocket PC 2003 Device Pocket PC 2003 SE Emulator
Devices Form Factors	Pocket PC 2003 SE Square Emulator E Pocket PC 2003 SE Square VGA Emulator Pocket PC 2003 SE VGA Emulator
HTML Designer Office Tools	Smartphone 2003 Device <u>Properties</u>
Test Tools Text Templating	Smartphone 2003 SE QVGA Emulator USA Windows Mobile 5.0 Pocket PC R2 Emulator
Windows Forms Designer	USA Windows Mobile 5.0 Pocket PC R2 Square Emulator
Workflow Designer	Default device:
	· · · · · · · · · · · · · · · · · · ·
	OK Cancel

Figure 6.22

4. Press Configure under Transport.

CASIO x86 Device Properties	? ×
Default output location on device:	
	•
T <u>r</u> ansport:	
TCP Connect Transport	Configure
<u>B</u> ootstrapper:	
ActiveSync Startup Provider 🔹	Con <u>f</u> igure
☑ Detect when device is disconnected	
	OK Cancel

Figure 6.23

5. Enter the IP address that was skipped in step 1 for the Use specific IP address and press OK.



Figure 6.24

6. Navigate **Tools** -> **Connect to Device** from the Visual Studio 2008 menu, select **CASIO x86** for the platform and press **Connect**.

onnect to Device	? ×
To connect to a physical device or launch an emulator image, select a platform, then choose a device below.	Connect
Platform:	Cancer
CASIO x86 🔹	
Devices:	
CASIO x86 Device	

Figure 6.25

7. Device Emulator setting has succeeded if **Connection succeded** is displayed as in the figure below. If a message other than the one shown below is displayed, please check that the IP address entered matches the Device Emulator IP address.

Connecting	States Tag	? ×
Ş		
To 'CASIO x86 Device' Connection succeeded.		
		Close

Figure 6.26

6.1.6 Setting the Device Emulator Screen Resolution

Set the screen resolution of Device Emulator. The default starts up with a resolution of 480x800. The following example describes the procedure to start up with a screen resolution of 480x640.

1. Start Device Emulator and press the **space** key while the screen below is displayed.

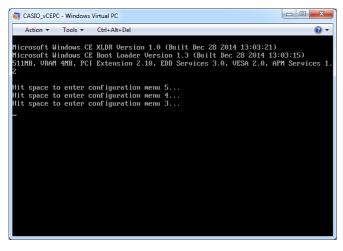


Figure 6.27

2. Press **5** on the keyboard when the **Main Menu** of the Device Emulator Bootloader starts.

Scalo_vCEPC - Windows Virtual PC	
Action ▼ Tools ▼ Ctrl+Alt+Del 🕡	-
Microsoft Windows CE XLDR Version 1.0 (Built Dec 28 2014 13:03:21) Microsoft Windows CE Boot Loader Version 1.3 (Built Dec 28 2014 13:03:15) 511MB, VRAM 4MB, PCI Extension 2.10, EDD Services 3.0, VESA 2.0, APM Services 2 2	1.
Hit space to enter configuration menu 5 Hit space to enter configuration menu 4 Hit space to enter configuration menu 3	
Main Menu	
 [1] Show Current Settings [2] Select Boot Source [3] Select KIL Device [4] Network Settings [5] Display Settings [6] Debug Port Settings [7] Save Settings [0] Exit and Continue 	
Selection: _	

Figure 6.28

3. Press **3** on the keyboard when the **Display Settings** starts.

TASIO_vCEPC - Windows Virtual PC	
Action Tools Ctrl+Alt+Del	
Main Menu	
 [1] Show Current Settings [2] Select Boot Source [3] Select KITL Device [4] Network Settings [5] Display Settings [6] Debug Port Settings [7] Save Settings [0] Exit and Continue Selection: 5 	
Display Settings	
[1] Show Current Settings [2] Change Display Resolution [3] Change Viewable Display Region [0] Exit and Continue Selection: _	

Figure 6.29

4. Press the **h** key on the keyboard when the **Select Display Mode** starts.

Results CASIO_vCEPC - Windows Virtual PC	
Action - Tools - Ctrl+Alt+Del	
[1] Show Current Settings	Ŭ
[2] Change Display Resolution	
[3] Change Viewable Display Region	
[0] Exit and Continue	
Selection: 3	
Select Display Mode	
[a] Full Screen	
[b] 176 x 220	
[c] 240 x 240	
[d] 240 x 320	
[e] 320 x 240	
[f] 320 x 320	
[g] 400 x 240	
[h] 480 x 640	
[i] 480 x 800	
[j] 640 x 480 [k] 640 x 640	
[1] 800×480	
Selection (actual 240 x 320):	

Figure 6.30

5. Press the **0** key to return to the **Display Settings**.

RASIO_vCEPC - Windows Virtual PC	
Action Tools Ctrl+Alt+Del	0 -
[b] 176 x 220	
[c] 240 x 240	
[d] 240 x 320 [e] 320 x 240	
[f] 320 x 320	
[q] 400 x 240	
[ĥ] 480 x 640	
[i] 480 x 800	
[j] 640 x 480	
[k] 640 x 640 [1] 800 x 480	
Selection (actual 240 x 320): h	
Display mode set to 480 x 640.	
Display Settings	
[1] Show Current Settings	
[2] Change Display Resolution	
[3] Change Viewable Display Region	
[0] Exit and Continue	
Selection:	

Figure 6.31

6. If you will start Device Emulator at a resolution of 480x640 from now on, then press the **7** key to save the settings and then the **0** key to start Device Emulator.

If you will start Device Emulator at a resolution of 480x640 just one time, then press the **0** key to start Device Emulator.

CASIO_vCEPC - Windows Virtual PC
Action Tools Ctrl+Alt+Del
Display Settings
 [1] Show Current Settings [2] Change Display Resolution [3] Change Viewable Display Region [0] Exit and Continue Selection: 0
Main Menu
 [1] Show Current Settings [2] Select Boot Source [3] Select KITL Device [4] Network Settings [5] Display Settings [6] Debug Port Settings [7] Save Settings [0] Exit and Continue
Selection:

Figure 6.32

7. Device Emulator will start up at a resolution of 480x640. (The software may take several minutes to start up depending on the environment.)

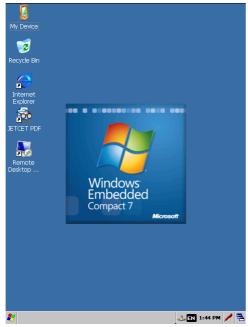


Figure 6.33

6.1.7 Setting the Device Emulator Disk Size

The default size of FlashDisk is 512MB in Device Emulator. Follow the procesure below to increase the size of FlashDisk in Device Emulator. These screens are different depending on the environment.

1. Start Run, enter diskmgmt.msc and click OK.

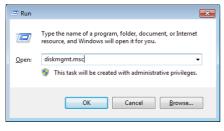


Figure 6.34

2. Disk Management will start. Navigate to Action -> Create VHD.

(= =	Refresh	🗑 🚅 🍳	50				
Volur	<u>R</u> escan Disks	Type	File Syster	n Status	Capacity	Free Spa	9
	Create VHD	Basic	NTFS	Healthy (S		68.50 GB	6
👄 (D	Attach VHD	Basic	NTFS	Healthy (P		41.59 GB	1
🛥 (G		Basic	NTFS	Healthy (P	931.51 GB	612.40 GB	6
	All Tas <u>k</u> s						
	<u>H</u> elp						
-							
•		ш					
	:0	III					
Disk Basic	(C:)			(D:)			-
Disk Basic 465.76 (GB 100.01 GB	NTFS		365.75 GB NTFS			
Disk Basic	GB 100.01 GB		e File, Active		artition)		
Disk Basic 465.76 (GB 100.01 GB	NTFS	e File, Active	365.75 GB NTFS	artition)		
Disk Basic 465.76 (5B (C:) 100.01 GB Healthy (S	NTFS	e File, Active	365.75 GB NTFS	artition)		

Figure 6.35

3. Enter the location and name of FlashDisk that is newly created to **Location**. And enter the size of FlashDisk to **Virtual hard disk size**. Select **Dynamically expanding** at **Virtual hard disk format** and click **OK**.

In this guide, FlashDisk having a size of 4GB is created to C:\DT-X200\CASIO_FLASHDISK_E_4G.vhd.



Figure 6.36

4. Right-click on the disk created in Step 3. Select **Initialize Disk**. Disk number is different depending on the environment.

	nagement						×
File Acti	on View Help						
🧼 🔿 🗄	T 🛛 🖬 🕄 💕	1					
Volume	Layout	Туре	File System	Status	Capacity	Free Spa	%
🗀 (C:)	Simple	Basic	NTFS	Healthy (S	100.00 GB	67.97 GB	68
🚥 (D:)	Simple	Basic	NTFS	Healthy (P	365.75 GB	41.59 GB	11
🚥 (G:)	Simple	Basic	NTFS	Healthy (P	931.51 GB	612.40 GB	66
4							
<		III					
Disk 2 Unknov	Initialize Disk						
Disk 2 Unknov 4.00 GB							•
Disk 2 Unknov	Initialize Disk Offline Detach VHD						-
Disk 2 Unknov 4.00 GB	Offline						

Figure 6.37

5. Select only the disk created in Step 3 at Select disks. And select MBR at Use the following partition style for the selected disks. Click OK.

nitialize Disk			
You must initialize a disk	before Logical Disk	Manager can acce	essit.
<u>S</u> elect disks:			
Disk 2			j
Use the following partitio	n style for the selec	ted disks:	
MBR (Master Boot F	lecord)		
O GPT (GUID Partition	Table)		
Note: The GPT partition	etule is not recogniz	ad by all previous y	ereione of
Windows. It is recommer	ided for disks larger	than 2TB, or disks	used on
Itanium-based computers			
		ОК	Cancel

Figure 6.38

6. Make sure that the following red frame in is **Online**. If **Not Initialized** is shown, start again from Step 4. Right-click on the place where **Unallocated** is being displayed, please select the **New Simple Volume**.

Bisk Managem File Action V	iew Help					
		5				
Volume (C:) (D:) (G:)	Layout Simple Simple Simple	Type Basic Basic Basic	File System NTFS NTFS NTFS	Status Healthy (S Healthy (P Healthy (P	Free Spa 67.97 GB 41.59 GB 612.40 GB	% 68 11 66
•	1	m				F A
Disk 2 Basic A00 0B Online	4.00 GB Unallocated		,	ple Volume		
Disk 2 Basic 4.00 OB Online			New Spar New Strip New Mirr	ple Volume nned Volume ored Volume)-5 Volume		^
Disk 2 Basic 4.00 OB Online	Unallocated		New Spar New Strip New Mirr	nned Volume oed Volume ored Volume D-5 Volume		^

Figure 6.39

7. New Simple Volume Wizard will start. Click Next.

New Simple Volume Wizard		×
	Welcome to the New Simple Volume Wizard	
	This wizard helps you create a simple volume on a disk.	
	A simple volume can only be on a single disk.	
	To continue, click Next.	
	< <u>B</u> ack <u>N</u> ext > Can	cel

Figure 6.40

8. Enter the same value as Maximum disk space in MB to Simple volume size in MB. Click Next.

pecify Volume Size Choose a volume size that is betwee	en the maximum and minimum sizes.
Maximum disk space in MB:	4093
Minimum disk space in MB:	8
Simple volume size in MB:	1132
	< Back Next >

Figure 6.41

9. Select the drive letter not in use at **Assign the following drive letter**. Click **Next**.

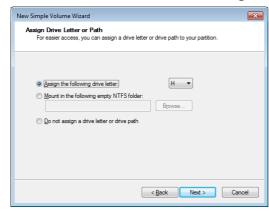


Figure 6.42

10. Select FAT32 at File system and empty the field of Volume label. Click Next.

New Simple Volume Wizard	×
Format Partition To store data on this partition, you m	uust format it first.
Choose whether you want to format	this volume, and if so, what settings you want to use.
Do not format this volume	
Format this volume with the format the second se	llowing settings:
<u>F</u> ile system:	FAT32
Allocation unit size:	Default 👻
Volume label:	
Perform a quick format	
Enable file and folder co	ompression
	< Back Next > Cancel

Figure 6.43

11. Make sure that the settings are correct. Click **Finish**.

New Simple Volume Wizard		×
	Completing the New Simple Volume Wizard	
	You have successfully completed the New Simple Volume Ward. You selected the following settings: Volume type: Simple Volume Data selected 108 × 8 Data sel	
	< Back Finish Cano	el

Figure 6.44

12. Return to **Disk Management**. Navigate to **Action -> Attach VHD**.

5	🚽 Disk Ma	nagement						×
	Eile Acti	ion <u>V</u> iew <u>H</u> elp						
	(= =	Re <u>f</u> resh						
Γ	Volur	<u>R</u> escan Disks	Туре	File System	Status	Capacity	Free Spa	%1
Ī	🗩 (C	Create VHD	Basic	NTFS		100.00 GB	67.97 GB	68
	🗩 (D	Attach VHD	Basic	NTFS	Healthy (P		41.59 GB	11
	□ (G □ (H	Help	Basic Basic	NTFS FAT32	Healthy (P Healthy (P		612.40 GB 3.99 GB	66 100
		Tich	Dasic	FAISZ	Fieduriy (P	5.55 05	5.55 06	100
	•							Þ
	_							-
	Disk 2 Basic							
	4.00 GB	(H:) 4.00 GB FAT3	22					
	Online		mary Partition)					E
	CD-RO							
	DVD (E:)							Ŧ
		ated 📕 Primary partiti	ion					
16								

Figure 6.45

13. Select existing FlashDisk at Location. Click OK. In this guide, C:\DT-X200\CASIO_FLASHDISK_E.vhd is selected.

Attach Virtual Hard Disk	×
Specify the virtual hard disk location on the computer.	
Location:	
C:\DT-X200\CASIO_FLASHDISK_E.vhd	Browse
Read-only.	
ОК	Cancel

Figure 6.46

- 14. Copy all folders and all files in the disk attached in Step 13 by explorer. And paste the folders and the files to the disk created in Step 3.
- 15. Return to **Disk Management**. Right-click on the disk created in Step 3. Select **Detach VHD**.

🚽 Disk Management 📃 🗖 💌							
File Action V	fiew Help						
♦ ♦	🗖 🖬 🗗 🖬	5					
Volume	Layout	Туре	File System	Status	Capacity	Free Spa	%
💷 (C:)	Simple	Basic	NTFS	Healthy (S	100.00 GB	67.97 GB	68
💷 (D:)	Simple	Basic	NTFS	Healthy (P	365.75 GB	41.59 GB	11
📼 (G:)	Simple	Basic	NTFS	Healthy (P		612.40 GB	66
🗀 (H:)	Simple	Basic	FAT32	Healthy (P		3.99 GB	10
💷 (I:)	Simple	Basic	FAT32	Healthy (P	249 MB	231 MB	93
Basic 4.00 GB Online	New Spanned						
Unline	New Striped Vo New Mirrored						
Disk 3	New RAID-5 Vo	olume					
^{□■} Disk 3 Basic Unallocatec	New RAID-5 Vo						-
Basic		namic Disk					-
Basic	Convert to Dyr	namic Disk					-
Basic	Convert to Dyr Convert to GP	namic Disk					
Basic	Convert to Dyr Convert to GP Offline	namic Disk					



Make sure that the disk created in Step 3 is displayed at Virtual hard disk file location. Click OK.



Figure 6.48

17. By the same procedure, detach the disk that is attached in Step 13.

- • × 🕞 🖓 🕞 🕨 casio 🔸 Virtual Machines • \$ P Sea Organize 🔻 🗐 Open 🔻 Share with 👻 Burn Settings Create virtual machine New folder iii • 🔟 🔞 Name Machine status Memory Primary disk Comments Date modified Configuratio 🔆 Favorites Desktop CASIO_vCEPC 512 MB C:\DT-X200\CASIO_vCEP... 3/21/2015 9:39 AM C:\Users\ca Powered down Recent Places 🥽 Libraries Documents Pictures 🜉 Computer 📬 Network

Configuration file: C:\Users\casio\AppDat... Memory: 512 MB Primary disk: C:\DT-X200\CASIO_vCE... Size: 1.19 KB

Folder path: C:\Users\casio\Virtual Machines Date created: 3/21/2015 9:27 AM

18. Select the file for Device Emulator named CASIO_vCEPC.vmcx. And click Settings.

Figure 6.49

T.

• Filename: CASIO_vCEPC Machine status: Powered down

CASIO_vCEPC

19. Select the disk created in Step 3 for Hard Disk 2. Click OK.

💐 CASIO_vCEPC - Window	vs Virtual PC Settings	
Setting Name Hard Disk 1 Hard Disk 1 Hard Disk 2 Undo Disks Dudo Disks COM1 COM2 Keyboard Com2 Networking Materiation Features Keyboard Com2 Networking Materiation Features Keyboard Com2 Com2 Networking Com2 Com2 Networking Com2 Com2 Networking Com2 Com2 Networking Com2	Current Value CASIO_vCEPC 512 MB CASIO_vCEPC_E CASIO_vCEPC_E CASIO_VCEPC_E Disabled E: None None None Not Available Full screen Not Available Show message	Hard Disk 2 None Virtual hard disk file: C:\DT-X200\CASIO_FLASHDISK_E_4G.vhd Egowse Current size: 26 MB Total disk size: 4,096 MB Type: Dynamic Create Modify
		You can use Create to add a new virtual hard disk. Use Modify to compact, convert, or merge a selected virtual hard disk. More about creating and modifying virtual hard disks OK Cancel

Figure 6.50

6.2 Device Emulator for WEH6.5

6.2.1 Installing Device Emulator

1. Click on **Installation List** at First Install for All Models.



Figure 6.51

2. Click on CASIO Device Emulator WVGA for Windows Embedded Handheld 6.5. (Select CASIO Device Emulator VGA for Windows Embedded Handheld 6.5 if you are using the VGA Emulator.)

HT Development Media Kit -,- Install for All Models -,-	Close
<casio exportsdk=""></casio>	
B CASIO ARMV7 ExportSDK	7.0.0
Export SDK for CASIO ARM/7 Models.	
CASIO ARMv5 ExportSDK	7.0.0
Export SDK for CASIO ARM/5 Models.	
CASIO x86 ExportSDK	7.0.0
Export SDK for Windows Embedded Compact 7 Device Emulator. (Opetion: Need for Devi Embedded Compact 7 Users)	ice Emulator for Windows
Energies compact - const	
<casio device="" library=""></casio>	3.0.2
CASIO Device Library> CASIO HT Common Development Device Library Cossio HT Common Development Which Runs in Microsoft Visual Studio 2008. for Each Model)	0.0.2
CASIO Device Library> CASIO HT Common Development Device Library Device Library For Application Development Which Runs in Microsoft Visual Studio 2008. for Each Model.) CASIO Device Emulator> CASIO Device Emulator for Windows Embedded Compact 7	(Note : Need Device Librar
CASIO Device Library> CASIO HT.Common.Development Device Library Cocksio HT.Common.Development Which Runs in Microsoft Visual Studio 2008. Ior Each Model) CASIO Device Emulator> CASIO Device Emulator for Windows Embedded Compact Z Virtual PC Which Is A Tool That Allows Software Developer to Debug And Verify Applicati	(Note : Need Device Librar
CASIO Device Library> CASIO HT Common Development Device Library CASIO HT Common Development Which Runs in Microsoft Visual Studio 2008. for Each Model) CASIO Device Emulator> CASIO Device Emulator for Windows Embedded Compact Z Virtual PC Which is A Tool That Allows Software Developer to Debug And Verify Application PC (Note : Install Windows Vertual PC)	(Note : Need Device Librar
<casio device="" library=""> CASIO.HT.Common.Development.Device.Library Onice.Library For Application Development Which Runs in Microsoft Visual Studio 2008.</casio>	(Note : Need Device Librar 1.0.2 on Program While Running 1.0.0

Figure 6.52

3. Press Next.



Figure 6.53

4. Agree to the software license and press Next.



Figure 6.54

5. Enter the **User Name** and **Organization** and press **Next**.

Please enter your information. User Name: Casio Organization: Casio InstallShield	Customer Information	
Casio Organization: Casio	Please enter your information.	
, Qrganization: [casio	User Name:	
casio	casio	
	Organization:	
TaetalChold	casio	
Tashilishid		
Tashelifadd		
Tost-Sichald		
Tost-Sichald		
Teetallkiald		
TootallChield		
	TeatallShield	
	< Back	Next > Cancel

Figure 6.55

6. Change the install destination if necessary and press **Next**. By default, the software is installed in the following locations.

32bit: C:\Program Files\Windows Mobile 6 SDK 64bit: C:\Program Files (x86)\Windows Mobile 6 SDK

闄 Window	s Embedded Handheld 6.5 Emulator Image for CASIO (English) - Install
	ion Folder xt to install to this folder, or click Change to install to a different folder.
	Install Windows Embedded Handheid 6.5 Emulator Image for CASIO (English) to: C:\Program Files (x86)\Windows Mobile 6 SDK\
InstallShield	<back next=""> Cancel</back>

Figure 6.56

7. Press Install.

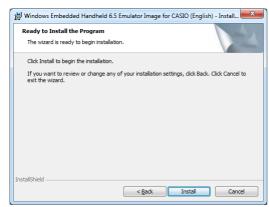


Figure 6.57

8. Press **Finish** when the install has finished.



Figure 6.58

6.2.2 Starting Up Device Emulator

It requires installation of I/O Simulator to start up Device Emulator. For installation method, refer to Chapter 6.3.1 "Installing I/O Simulator". There are WVGA Device Emulator and VGA Device Emulator. In this guide, starting up method of WVGA Device Emulator is explained.

- 1. Navigate to Start -> CASIO Device Emulator -> WEH6.5 WVGA. When using VGA Device Emulator, navigate to Start -> CASIO Device Emulator -> WEH6.5 VGA.
- 2. Device Emulator will launch.

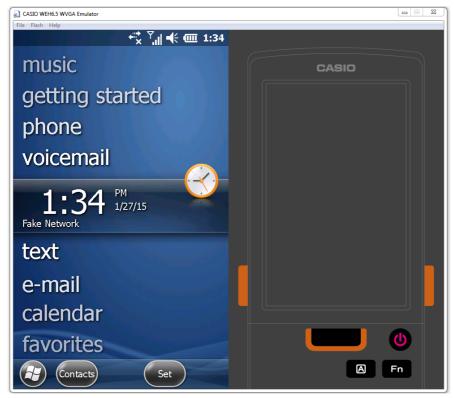


Figure 6.59

6.2.3 Connecting to Device Emulator

Setting Windows Mobile Device Center

- 1. Start up Windows Mobile Device Center and then navigate to **Mobile Device Settings** -> **Connection Settings**.
- 2. In **Connection Settings** screen, check in the **Allow connections to one of the following** box and choose **DMA** in the pull-down menu.



Figure 6.60

Connection via Windows Mobile Device Center

- 1. Navigate to **Tools** -> **Device Emulator Manager...** from the Visual Studio 2008 menu.
- 2. Right click on CASIO WEH6.5 WVGA Emulator and select Cradle.

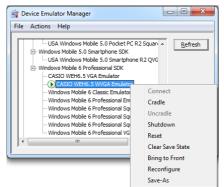


Figure 6.61

3. Windows Mobile Device Center launches and the 🖾 icon appears on status bar in Device Emulator.

6.3 I/O Simulator

The next section continues by explaining how to install the software needed to use the I/O simulator.

6.3.1 Installing I/O Simulator

If the old version of **CASIO IO Simulator** is already installed, uninstall it. And if there is **CASIO Device Emulator** in list of Uninstall a program of Control Panel, also uninstall it. After the uninstallation has been completed, follow the procedure below to install CASIO IO Simulator.

1. Install the **CASIO IO Simulator** in the **Installation List** at First Install for All Models on the product CD-ROM.

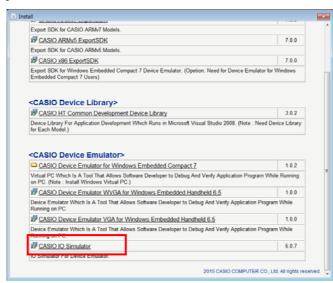


Figure 6.62

 Enable sharing for the following folder, if you will use Device Emulator for WEC7. Enable read and write access permissions. C:\ProgramData\CASIO

6.3.2 Starting Up I/O Simulator

- 1. Navigate to CASIO Device IO Simulator on start menu.
- 2. Following message is displayed. If you will use Device Emulator for WEC7, press Yes.

CASIO KeySimulator	x
Is your target emula	tor WEC7 ?
<u>Y</u> es	No

Figure 6.63

3. IO Simulator and Key Simulator start.

В	DeviceIOS	Simulat	or		
	Model	Туре	Code	Note	
		t			
	Add1E	<u> </u>	Add2E	Edit Del UP	DOWN
	STATES		IG	E 1	
	□ I/O	BOX	~	Low Battery	
				L 📶	
				P	
	NOTIFIC	OITAC	1		
	LED1			LED2 Vibration Backli	ght
		Π			
		U			

Figure 6.64

6.3.3 Operating I/O Simulator

The I/O Simulator simulates registration of bar codes, generation of low battery warning, detection of terminal being mounted on the cradle.

Registration of bar code symbologies

1. Registration

Click **ADD1D** or **ADD2D** button (circled in red in Figure 6.65) to go into the bar code registration mode.

Model	Туре	Code	Note					
Add1	D	Add20		Edit	Del	1	UP	DOW
		-	/_					
STATE		NG						
	O Box				□ L0	w Batte	ry	
		F	1					
			5					
		_	×					
NOTIF	ICATIO	N						
NOTIFI LED1			LED2	Vibratio	n		Backli	ght
NOTIFI LED1			LED2	Vibratio	n A	N	Backli	ght

Figure 6.65

2. Bar code registration

Choose a bar code symbology in the **Code Type** pull-down menu that you wish to register in the **I/O Simulator**.

Add Code		X
Code Type:	JAN 💌 JAN JAN Addon	
Code:	EAN	
Note:	EAN Addon UPC-A UPC-A Addon UPC-E UPC-E Addon Code39 NW-7 Industrial 20f5 Interleaved 20f5 Code93	
	Code128 MSI IATA	OK Cancel
	RSS14 RSS Limited	
	RSS Expanded RSS14 Statcked RSS Expanded Stat	

Figure 6.66

3. Registration of bar code and note

Enter bar code data in the **Code** field (see Figure 6.67) and a note about the bar code in the **Note** field if necessary. Click **OK** button to complete the bar code registration.

Add Code	×
Code Type:	JAN
Code:	49143157
Note:	JAN-8 CODE
	OK Cancel

Figure 6.67

4. Completion of registration

After completion of the bar codes registration, the screen in Figure 6.68 shows a list of bar codes that have been registered in the **I/O Simulator**. Prior to debugging with the **Device Emulator**, make sure that you register all bar codes you wish to use in debugging.

Model	Туре	Code	Note				
1D	JAN	49143157	JAN-8 CO	DE			
Add1	D	Add2D	Edit	0	el	UP	DOWN
STATE		NG					
	O Box				Low Bat	tery	
NOTIF							
NUTH	CATIO	N					
LED1		LED	2 Vibra	ation		Back	ight
	-		-		18 Sal		
					1L 11		

Figure 6.68

5. Editing registered bar code content

Highlight a bar code in the list of registered bar codes (see Figure 6.68) and click **Edit** button. Figure 6.69 appears for editing the bar code and its information.

Edit Code	×	
Code Type:	JAN	
Code:	49143157	
Note:	JAN-8 CODE	
	OK Cancel	

Figure 6.69

6. Deleting registered bar code content

Highlight a bar code in the list of registered bar codes (see Figure 6.68) and click the **Del** button. Dialogue screen in Figure 6.70 appears for you to confirm the deletion. If it is okay to delete, click **Yes** button, otherwise click **No** button.

ſ	Confirm Delete
	'JAN'Are you sure you want to delete
	<u>Y</u> es <u>N</u> o

Figure 6.70

Detection of Terminal in Cradle and Low Battery Warning

If you check the **I/O Box** and **Low Battery** boxes in STATE SETTING field (see Figure 6.71), the simulator simulates the respective events in the emulator.

Model	Туре	Code	Note								
Add1		Add2E		Edit	1	Del	1	UP	1	DOWN	
Add1	<u></u>	Add2L				Del		UP		DOWN	_
	OETII	NG -				/			-		
	O Box				1		w Batte	ry			
		F	1		(-			
			>	/	Υ.						
NOT	OATIO		/					_	/		
				Vib	ration			Bac	klight		
LED1			LED2	110		15	- C.		۰.	_	

Figure 6.71

I/O Box

If this box is checked, a notification is issued that the connection between the **Device Emulator** and cradle has been established. This notification can be utilized by the application.

Low Battery

If this box is checked, a notification that a low battery state has occurred is raised. The icon in the Toolbar in the emulated screen appears too. The notification can be utilized by the application to recognize the low battery state in the hardware.

Indications

The I/O Simulator expresses a change of state that occurred in the **Device Emulator**.

• LED

When the **Device Emulator** turns on the LED, the LED icon (LED2) in the I/O Simulator also turns on. See Figure 6.72.

• Vibration

When the **Device Emulator** vibrates, the vibration icon in the I/O Simulator also turns on. See Figure 6.72.

Model	Туре	Code	Note
Add1(<u> </u>	Add2E	Edit Del UP DOWN
STATE	SETTI		
		••	Low Battery
,	. 2.34	~	, con ballery
			5 <u><u>u</u></u>
			•
NOTIFI	CATIO	N N	
LED1	_		LED2 Vibration Backlight



Keys

A key event is notified to Device Emulator by input on the Key Simulator. If you use key which doesn't exist in Key Simulator, input by keyboard of PC.

NeySimulator		
	A Fn	

Figure 6.73

7. Visual Studio

This chapter describes application development steps in Visual Studio 2008 to create an example program.

The example program referred to in this chapter is an application program developed in three development environments - C++, Visual Basic and C# - using the CASIO Common Device Control Library or Common Device Control Class Library. The example program for all three environments repeats turning on and off the LED to brink for a period of 5 seconds.

The example program in this chapter runs also in the Device Emulator.

7.1 Developing in VB

This chapter describes necessary steps to develop the example application program in VB environment using the Common Device Control Class Library.

Application Development Procedure

Subsequent steps show how to create and start up a simple program using one of the system functions. When running the program, the LED will blink in red for 5 seconds.

1. Create a new VB Smart Device Application in Visual Studio.

New Project			<u> </u>
<u>P</u> roject types:		Templates:	.NET Framework 3.5 🔹 🖽 🔚
General		Visual Studio installed templates	
MFC		Smart Device Project	
Smart Devi	ce	My Templates	
Test		Search Online Templates	
Win32		a search on the remplates	
Other Languag			
Visual Basic Window	-		
Windov Web	vs 🗉		
Smart D	Invice		
Office	vevice		
Databas	se		
Reporti	ng		
Test	-		
WCF			
Workflo			
A project for Smar	t Device applications. Cl	noose target platform, Framework ver	sion, and template in the next dialog box.
<u>N</u> ame:	SmartDeviceProject1		
Location:	C:\MY PROJECT		✓ Browse
Solution Na <u>m</u> e:	SmartDeviceProject1		Create directory for solution
			OK Cancel

Figure 7.1

2. Select WindowsCE for Target platform and select Device Application from Templates.

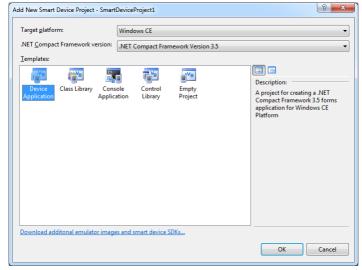


Figure 7.2

3. Navigate to **Project** -> **Add Reference** from the Visual Studio 2008 menu.

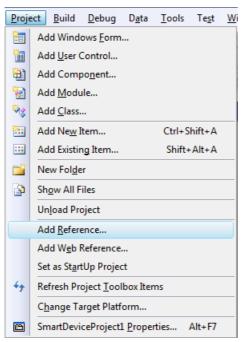


Figure 7.3

4. Click Browse tab.

M Add Reference	P	X
.NET Projects Browse Recent		
Look in: 🌗 SmartDeviceProject1 🗸	G 🖻 🖻 🛄 -	
Name	Date modified	Ту
🌗 bin	1/14/2015 11:53 AM	Fi
🌗 My Project	1/14/2015 11:53 AM	Fi
🍌 obj	1/14/2015 11:53 AM	Fi
۲		•
		·
File name:		-
Files of type: Component Files (*.dll;*.tlb;*.olb;*.ocx;*.ex	ke)	•
	OK Cano	el

Figure 7.4

Reference folder which Class Library is installed, and select SystemLibNet.dll.
 32bit: C:\Program Files\CASIO\MBSYS\WindowsCE
 64bit: C:\Program Files (x86)\CASIO\MBSYS\WindowsCE

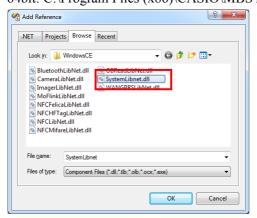


Figure 7.5

- 6. Click **OK** to close the dialog.
- 7. Change form size to 240,320 by form property.
- 8. Add a button to the form, rename it **SetLED.**

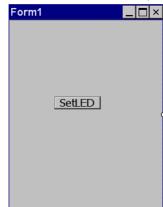


Figure 7.6

9. Double click the button. named **SetLED** to display code of the form.

10. In the event function for the button to click, add the following code.

```
Dim result As Int32
Dim msg As String
result = Calib.SystemLibNet.Api.SysSetLED(
         Calib.SystemLibNet.Def.LED RED, 5, 8, 8)
'.NET vales of "true" and "false" are "-1" and "0" respectively.
If result = -1 Then
   result = Calib.SystemLibNet.Api.SysGetLED()
   Select Case (result And &HF)
      Case Calib.SystemLibNet.Def.LED OFF
         msg = "LED OFF"
      Case Calib.SystemLibNet.Def.LED RED
         msg = "LED RED"
      Case Calib.SystemLibNet.Def.LED GREEN
         msg = "LED GREEN"
      Case Calib.SystemLibNet.Def.LED ORANGE
         msg = "LED ORANGE"
      Case Calib.SystemLibNet.Def.LED BLUE
         msg = "LED BLUE"
      Case Calib.SystemLibNet.Def.LED CYAN
         msg = "LED CYAN"
      Case Calib.SystemLibNet.Def.LED MAGENTA
         msg = "LED MAGENTA"
      Case Else
         msg = "LED UNKNOWN"
   End Select
   MessageBox.Show(msg, "LED")
End If
```

Note:

If you type this code manually you should see the IntelliSense offer you suitable options as appropriate. If you do not, make sure you review steps 1 to 5 to make sure you have added the reference correctly.

11. Navigate to **Build -> Build Solution** from the Visual Studio 2008 menu to build application.

- 12. Initiate **Windows Mobile Device Center** to establish connection between the device and PC.
- 13. Choose Deploy <name of project> on Build menu.

Pocket PC 2003 SE Emulator 🔹 🗐 🚛 🚛 📮	1
CASIO ARMv5 Device	
CASIO x86 Device	
Pocket PC 2003 Device	
Pocket PC 2003 SE Emulator	
Pocket PC 2003 SE Square Emulator	
Pocket PC 2003 SE Square VGA Emulator	
Pocket PC 2003 SE VGA Emulator	
USA Windows Mobile 5.0 Pocket PC R2 Emulator	
USA Windows Mobile 5.0 Pocket PC R2 Square Emulator	
USA Windows Mobile 5.0 Smartphone R2 QVGA Emulator	
Windows CE Device	
Windows Mobile 5.0 Pocket PC Device R2	-

Figure 7.7

Table 7.1

Device
DT-X100 / DT-X200
IT-G500 WEC7 Model
Device Emulator for WEC7
IT-G500 WEH6.5 Model
WVGA Device Emulator for WEH6.5
VGA Device Emulator for WEH6.5

14. Navigate to **Debug** -> **Start Debugging** or **Start Without Debugging** from the Visual Studio 2008 menu.

The project will be built and copied to the device. By default, it will be copied to **\Program** Files**\<name of project>** folder. SystemLibNet.dll will be deployed to the same folder.

Check that the program works correctly on the device.

7.2 Developing in C#

This chapter describes necessary steps to develop the example application program (see Chapter 8) in C# environment using the Common Device Control Class Library.

Application Development Procedure

Subsequent steps show how to create and start up a simple program using one of the system functions. When running the program, the LED will blink in red for 5 seconds.

1. Create a new C# Smart Device Application in Visual Studio .NET.

New Project					? ×
<u>P</u> roject types:		Templates:	(.NET Framework 3.5	• ::: :::
MFC		Visual Studio installed templates			
Smart Devic	e	Smart Device Project			
Test		My Templates			
Win32		Search Online Templates			
Other Language Visual Basic					
Visual C#					
Window	< .				
Web					
Smart De					
Office					
Database	e				
Reportin	g				
Test					
WCF					
Workflov	w +				
A project for Smart	Device applications. Cl	hoose target platform, Framework ver	ion, and template in the nex	t dialog box.	
<u>N</u> ame:	SmartDeviceProject1	1			
Location:	C:\MY PROJECT			•	<u>B</u> rowse
Solution Na <u>m</u> e:	SmartDeviceProject1		Create directory for sol	ution	
				ОК	Cancel

Figure 7.8

2. Select WindowsCE for Target platform and select Device Application from Templates.

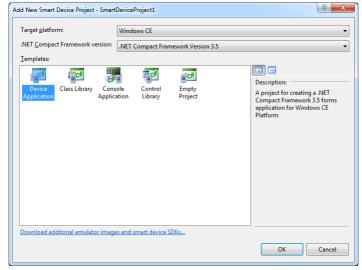


Figure 7.9

3. Navigate to **Project -> Add Reference** from the Visual Studio 2008 menu.

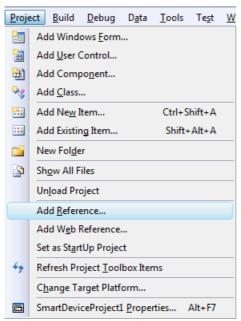


Figure 7.10

4. Click Browse tab.

1 (14 (2015 12 02 014
1/14/2015 12:02 PM
1/14/2015 12:02 PM
1/14/2015 12:02 PM
x;*.exe)

Figure 7.11

Reference folder which Class Library is installed, and select SystemLibNet.dll.
 32bit: C:\Program Files\CASIO\MBSYS\WindowsCE
 64bit: C:\Program Files (x86)\CASIO\MBSYS\WindowsCE

	-	
Add Reference		? <mark>?</mark>
.NET Projec	ts Browse Recent	
Look in: 🌗	WindowsCE	- G 🌶 📂 🖽
NFCLibN	ibNet.dll bNet.dll .ibNet.dll aLibNet.dll agLibNet.dll	SystemLibret.dll
•	m	•
File <u>n</u> ame:	SystemLibnet	•
Files of type:	Component Files (*.dll;	*tlb;*.olb;*.ocx;*.exe)
		OK Cancel

Figure 7.12

- 6. Click **OK** to close the dialog.
- 7. Change form size to 240,320 by form property.
- 8. Add a button to the form, rename it **SetLED.**



Figure 7.13

9. Double click the button. named **SetLED** to display code of the form.

10. At the top of your source file add the following code.

```
using Calib;
```

```
11. Add a button to your form, rename it LED and double click it and then add the following code:
```

```
Int32 result = new Int32();
string msg;
result = SystemLibNet.Api.SysSetLED(SystemLibNet.Def.LED RED, 5,
8, 8);
// .Net values "true" and "false" are "-1" and "0" respectively.
if (result == -1)
{
   result = SystemLibNet.Api.SysGetLED();
   switch(result & 0x000000F)
   {
      case SystemLibNet.Def.LED OFF:
          msg = "LED OFF";
          break;
      case SystemLibNet.Def.LED RED:
          msg = "LED RED";
          break;
      case SystemLibNet.Def.LED GREEN:
          msg = "LED GREEN";
          break;
      case SystemLibNet.Def.LED ORANGE:
          msg = "LED ORANGE";
          break;
      case SystemLibNet.Def.LED BLUE:
          msg = "LED BLUE";
          break;
      case SystemLibNet.Def.LED CYAN:
          msg = "LED CYAN";
          break;
      case SystemLibNet.Def.LED MAGENTA:
          msg = "LED MAGENTA";
          break;
      default:
          msg = "LED UNKNOWN";
          break;
   }
   MessageBox.Show( msg, "LED");
}
```

Note:

If you add this code manually you should see the IntelliSense offer you suitable options as appropriate. If you do not see this, then review steps 2 to 4 in the previous page to make sure you have not made a mistake.

- 12. Navigate to **Build -> Build Solution** from the Visual Studio 2008 menu to build application,.
- 13. Initiate Windows Mobile Device Center to establish connection between the device and PC.
- 14. Select Deploy <name of project> on Build menu.

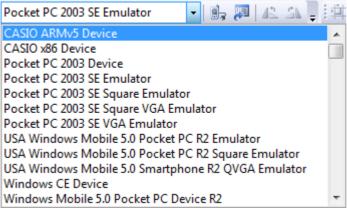


Figure 7.14

Table 7.2

Build menu	Device
CASIO ARMv5 Device	DT-X100 / DT-X200
CASIO ARMv7 Device	IT-G500 WEC7 Model
CASIO x86 Device	Device Emulator for WEC7
Windows Mobile 6 Professional Device	IT-G500 WEH6.5 Model
CASIO WEH6.5 WVGA Emulator	WVGA Device Emulator for WEH6.5
CASIO WEH6.5 VGA Emulator	VGA Device Emulator for WEH6.5

15. Navigate to **Debug** -> **Start Debugging** or **Start Without Debugging** from the Visual Studio 2008 menu.

The project will be built and copied to the device. By default, it will be copied to **\Program** Files**\<name of project>** folder. SystemLibNet.dll will be deployed to the same folder.

Check that the program works correctly on the device.

7.3 Developing in C++

This chapter describes necessary steps to develop the example application program in C++ environment using the Common Device Control Library.

1. Create a new C++ Win32 Smart Device Project in Visual Studio 2008.

New Project				? ×
Project types: Visual C++ ATL CLR General MFC Smart Device Test Win32 Other Languages Visual Basic Visual Basic Visual Basic Visual C# Other Project Types Test Projects	Iemplates: Visual Studio installed templates ATL Smart Device Project MrC Smart Device Application Vin32 Smart Device Project My Templates Search Online Templates	👪 MFC Smart D	INET Framework 3.5 evice ActiveX Control evice DLL	• :: :
A Win32 or Console project for Wind	ows Mobile and other Windows CE-based	devices		
Name: DeviceApplicat	on1			
Location: C:\MY PROJEC	ſ		•	<u>B</u> rowse
Solution Name: DeviceApplicat	on1	Create directory for so	lution	
			ОК	Cancel

Figure 7.15

2. Press Next.

Wek	ome to the Win32 Smart Device Project Wizard
Overview Platforms Application Settings	These are the current project settings: • Windows Mobile 5.0 Pocket PC SDK Platform • Windows application Click Finish from any window to accept the current settings. After you create the project, see the project's readme, but file for information ab the project features and files that are generated.
	< Previous Next > Finish Cance

Figure 7.16

3. Choose **Windows Mobile 5.0 Pocket PC SDK** in the Selected SDKs field in the Platforms of Win32 Smart Device Project Wizard and click < button.

Select platform SDKs to be added to the current project.
Select platform SDKs to be added to the current project.
Installed SDKs: Pocket PC 2003 Smartphone 2003 Windows Mobile 5.0 Pocket PC SDH Windows Mobile 5.0 Pocke
Windows Mobile 5.0 Pocket PC SDK Instruction sets: ARMV4I <previous next=""> Finish Cancel</previous>

Figure 7.17

4. Choose SDK for device which you will use in the **Installed SDKs** field and click > button. In this guide, 2 of all SDK is chosen.

Win32 Smart Device Project Wiz	ard - DeviceApplication1	? ×
Platform	IS	
Overview Platforms Application Settings	Select platform SDKs to be added to the current project. Installed SDKs: Pocket PC 2003 Smerphone 2003 Windows Moble 5.0 Somerphone CASIO 2016	
	CASIO ARMv5 Instruction sets: ARMv4I < Previous Next > Finit	sh Cancel

Figure 7.18

Table 7.3	able 7.3
-----------	----------

SDK	Device
CASIO ARMv5	DT-X100 / DT-X200
CASIO ARMv7	IT-G500 WEC7 Model
CASIO x86	Device Emulator for WEC7
Windows Mobile 6 Professional SDK	IT-G500 WEH6.5 Model / Device Emulator for
	WEH6.5

 Confirm that there are CASIO ARMv5, CASIO ARMv7, CASIO x86 and Windows Mobile 6 Professional SDK in the Selected SDKs field, and press Next.

Win32 Smart Device Project Wizard - DeviceApplication1				
Platform	s			
Overview Platforms Application Settings	Select platform SDKs to be added to the current project. Installed SDKs: Podet PC 2003 Smartphone 203 Windows Mobile 5.0 Podet PC SE Windows Mobile 5.0 Smartphone			
	CASIO x86 Instruction sets: x86 <previous next=""> Finish Cancel</previous>			

Figure 7.19

6. Choose **Console application** for the Application type in the Application Settings menu, and press **Finish**.

	Wizard - DeviceApplication1	8	X
Overview Platforms Application Settings	Application type: Vindows application © Cgnsole application © Static © Static library Addinal options: © Ergovt symbols V Brecompiled header	Add support for: ☐ ATL ☐ MFC	
	< Previous	Next > Finish Car	icel

Figure 7.20

7. In Solution Explorer, click **DeviceApp.cpp** and then append the source code below subsequent to "#include <commetrl.h>".

```
#include <SystemLib.h>
#if !defined(_countof)
#define _countof(_Array) (sizeof(_Array) / sizeof(_Array[0]))
#endif
```

8. Append the source code below in the main function of **DeviceApp.cpp**.

```
DWORD result;
TCHAR msg[16];
result = SysSetLED(LED RED, 5, 8, 8);
if(result == TRUE)
{
   result = SysGetLED();
   switch(result & 0x000000F) {
   case LED_OFF:
      wcscpy_s( msg, _countof(msg), TEXT("LED_OFF") );
      break;
   case LED RED:
      wcscpy s( msg, countof(msg), TEXT("LED RED") );
      break;
   case LED GREEN:
      wcscpy s( msg, countof(msg), TEXT("LED GREEN") );
      break;
   case LED ORANGE:
      wcscpy_s( msg, _countof(msg), TEXT("LED ORANGE") );
      break;
   case LED BLUE:
      wcscpy_s( msg, _countof(msg), TEXT("LED_BLUE") );
      break;
   case LED CYAN:
      wcscpy s( msg, countof(msg), TEXT("LED CYAN") );
      break;
   case LED MAGENTA:
      wcscpy_s( msg, _countof(msg), TEXT("LED_MAGENTA") );
      break;
   default:
      wcscpy s( msg, countof(msg), TEXT("LED UNKNOWN") );
      break;
   }
   MessageBox(NULL, msg, TEXT("LED"), MB OK);
}
```

9. Navigate to Build -> Compile from the Visual Studio 2008 menu to build application.

10. Navigate to Project -> DeviceApplication1 Properties from the Visual Studio 2008 menu.

11. Navigate to **Configuration Properties** -> **Linker** -> **Input** -> **Additional Dependencies** and then append **SystemLib.lib** (see red circle in Figure 7.21).

onfiguration:	Active(Debug)		Active(CASIO	ARMv5 (ARMv4I))	Configuration Manager
Common P	roperties	Additional Depende	ncies	SystemLib.lib	[
Configurati	ion Properties	Ignore All Default Libraries		No	
General		Ignore Specific Library			
Debugg	jing	Module Definition F	ile		
Deploy	ment	Add Module to Asse	mbly		
C/C++		Embed Managed Re	-		
Linker		Force Symbol Refere			
Gen	eral	Delay Loaded DLLs		\$(NOINHERIT)	
Inpu		Assembly Link Reso	IICE	•,•••••••	
Mar	nifest File	Assembly Ellik Reso	aree		
Deb	ugging				
Syst	em				
	imization				
Emb	oedded IDL				
	anced				
	nmand Line				
	cument Generator				
	Information				
Build Ev					
Custom	Build Step	Additional Dependen	cies		
	ticode Signing	Specifies additional items to add to the link line (ex: kernel32.lib); configuration specific.			nfiguration specific.

Figure 7.21

12. Choose **Device** for the Target to establish connection with the PC.



Figure 7.22

Table 7.4

Build menu	Device
CASIO ARMv5 Device	DT-X100 / DT-X200
CASIO ARMv7 Device	IT-G500 WEC7 Model
CASIO x86 Device	Device Emulator for WEC7
Windows Mobile 6 Professional Device	IT-G500 WEH6.5 Model
CASIO WEH6.5 WVGA Emulator	Device Emulator for WEH6.5

 Navigate to Debug -> Start Debugging or Start Without Debugging from the Visual Studio 2008 menu.

The project will be built and copied to the device. By default, it will be copied to **\Program** Files**\<name of project>** folder.

Check that the program works correctly on the device.

8. Resources

Microsoft's own http://msdn.microsoft.com/mobility/default.aspx is an extremely comprehensive resource for programmers targeting WindowsCE .NET based devices. It includes links to most other useful web based resources. You will find detailed Software and Library manuals on http://world.casio.com/system/pa.