IT-600 Series

Quick Start Guide

(Version 1.07)

CASIO Computer Co., Ltd.

May 2010

Table of Contents

Editorial Record

Manual Version no.	Date edited	Page	Content
0.90	October 2005		Tentative version
0.91	November 2005	29	"ActiveSync connection via cradle" is added in Chapter 5.1 "ActiveSync Connection".
0.92	November 2005	30	The descriptions in Chapters 5.1 and 5.2 are revised.
		75	"Import Library" and "Header File are removed from Table 7.1 in Chapter 7.1.
		77	"Import Library" and "Header File are removed from Table 7.2 in Chapter 7.2.
1.00	November 2005		Original version
1.01	January 2006	16, 22, 24	The contents in Chapters 5.2.1, 5.2.2 and 5.2.3 are updated.
1.02	July 2006	9, 35	The explanation about Visual Studio 2005 is added in Chapters 2.3 and 7.
1.03	November 2006	7	"HA-D62IO" and "HA-D51TG" are added in Chapter 2.2.
		8	"HA-D62IO" is added in Fig 2.1
		15 to 17	Chapter 4.2 "HA-D62IO" is added.
		34 to 35	Chapter 5.7 "ActiveSync Connection via Ethernet" is added.
1.04	January 2008	6	Hardware specifications in Table 1.1 are updated.
		8	Regulatory note for the Chinese radio related regulations is added.
		9	IT-600M30E2, M30C2, M30R2, M30CR2, M30E2-CN, M30C2-CN, M30R2-CN, M30CR2-CN are added in Table 2.1.
		12	Software in Chapter 2.3 is updated.
		13	Chapter 3.1 "Application Development" is added.
		14	Chapter 3.2 "Installing CASIO SDK Files" is added.
		15	Chapter 3.3 "Installing CAB Files" is added.
		16	Figures 3.1 and 3.2 in Chapter 3.4 are corrected.
		35 to 36	Chapter 5.3 "USB Connection via Windows Mobile Device Center" is added.
		42 to 43	Direct link method with Visual Studio 2005 is added in Chapter 5.7 "Direct TCP/IP Connection from Visual Studio".
		50	Chapter 6.3 "Sample Program" is added.
		56 to 58	In Chapter 7.3 "Using CASIO Libraries from C++", a development method for VCC++ Project with Visual Studio is added.
		59	Chapter 7.4 "Sample Program" is added.
		60 to 73	Chapter 8. "Device Emulator" is added.
1.05	April 2008	56	In Chapter 7.3, the explanation on page 56 is updated.
		75	In Chapter 10, note about "VCC++ application development with Visual Studio 2005" is removed.

Continue.

1.06	January 2009	10	In Chapter 1.1, a note about dead pixels is added.
		10 to 12	In Chapter 1, Library Configuration, Development Reference Manuals, and Sample Program are added.
		19	In Chapter 3.2, a note about User Account Control is added.
		17 to 21, 49 to 52	Chapter 3 is divided into two chapters, Installing SDK to PC and Setting Up the Development Environment.
		49	The configuration of the CAB files is changed.
		50	In Chapter 6.1, the content in Table 6.1 is updated and a note about FLINK Library is added.
		53 to 68	Chapter of Device Emulator is relocated and rearranged.
		54	The limitation of audio system device in chapter of Device Emulator is deleted.
		55 to 60	In Chapter 7, images and usage of I/O Simulator are changed.
		16 to 21 53 to 80	Microsoft Visual Studio 2008 is added to development platform.
		73 to 80	In Chapter 9, the sample is updated.
1.07	May 2010	17, 19, 29	Supported OS is added. (Windows 7 / Windows 2008 Server)
		57	Note is added at case of using Device Emulator after Windows Vista OS
		20	Chapter 3.2 is modified.

Preface

This guide clearly and concisely sets out the information developers need to know to get started with the CASIO IT-600 development. Every method of connecting to your development system is covered and step by step instructions for installing and testing the CASIO SDKs 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.
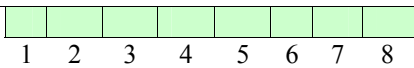
1. Product Overview

1.1 Hardware Specifications

The IT-600 series handheld terminal is one of the most powerful and versatile handheld devices on the market. It is particularly suited to the retail, stocktaking, parking enforcement and hospitality markets.

Table 1.1   Hardware specifications

Item	Specification	Remark
CPU, Memory		
CPU	Marvell® PXA270 Application Processor	Operating clock; max 520 MHz
RAM	64 MB	
FROM	128 MB (user area; approx. 60 MB)	
Scanner		
Type	Semi-conductor laser light	
Wave Length	650±10 nm	
Optical Output	<1 mW	
No. of scannings	100±20 times per second	
Resolution	0.127 mm (minimum)	
PCS	0.45 (minimum)	
Readable distance	Approx. 400 mm	Without HA-D50BN attached
	Approx. 0 to 200 mm	With HA-D50BN attached
Readable width	Max. 48 mm	When the distance is at 40 mm.
	Max. 314 mm	When the distance is at 400 mm.
	Max. 60 mm (contact scanning)	When HA-D50BN is attached.
Daylight for scanning	50,000 Lux or less	
Readable 1D bar code symbologies	UPC-A, UPC-E, EAN, Codabar, Code39, ITF, MSI, Industrial 2of5, Code93, Code128, IATA, EAN128, RSS-14, RSS Limited, RSS Expanded	
Vibrator	Yes (for indications of scanning completion, VoIp call-in)	
Display		
Display device	3.7-inch transflective TFT color LCD	65,536 colors (See note 3)
No. of dots	480 (h) x 640 (w)	
Dot pitch	0.117 (h) x 0.117 (w) mm	
Gradation	65,536 colors	
Display font	Scalable font	
Backlight	LED	
Indicator		
LED	1pc x LED (2 colors), 1pc x LED (3 colors)	Left: battery charge status Right: programmable
Input		
Keyboard	Numeric (Alphabet) keys, CLR key, Execute key, Fn key, Text key, Cursor key	
Control keys	Power ON/OFF key, Reset switch	
Trigger keys	Trigger R key, Trigger L key, Center Trigger key	
Touch panel	Yes	

Continue.

Infrared communication interface			
	Standard	IrDA ver.1.3 compatible	
	Communication process	Half duplex	
	Synchronization	Start-stop, frame method	
	Baud rate (in bps)	9600, 19200, 38400, 57600, 115200, 4M	
	Communication range	0 (contact) to 0.3m	
WLAN			
	Standard	IEEE 802.11b/g compatible	
	Modulation	DS: IEEE802.11b DS/OFDM: IEEE802.11g	See note 1.
	Frequency range	IEEE802.11b: 2.400 to 2.4835 GHz IEEE802.11g: 2.400 to 2.4835 GHz	
	Baud rate	IEEE802.11b: 11 Mbps (maximum) IEEE802.11g: 54 Mbps (maximum)	
	Communication range	IEEE802.11b/g: 50 m (indoor) to 150 m (outdoor)	Vary depending on the environment
	Number of channels	13	Three channels are available at the same time.
	Output power	IEEE802.11b: 12 to 15 dBm IEEE802.11g: 12 to 14 dBm	
	Other feature	Roaming between Access-Points	
Bluetooth			
	Standard	Bluetooth® Specification Ver.1.2	Not operable concurrently with WLAN operation.
	Comm. range	Approx. 3 m	Vary depending on the environment
	Output power	Max. 3 dBm (PowerClass 2)	
USB			
	Host	Baud rate	Full speed (12 Mbps)	
			Low speed (1.5 Mbps)	
		Power to an external device	5V±5% (maximum 500 mA)	See IT-600 Series Hardware Manual.
	Client	Baud rate	Full speed (12 Mbps)	
Extension port		Connector for HA-D94CFU or for HA-D51TG	Not applicable to IT-600M30R, M30CR. M30R2, M30CR2, M30R2-CN, M30CR2-CN
SD card slot		miniSD memory card	In the battery compartment.
Terminals for USB cradle	Layout	(diagram: 1 2 3 4 5 6 7 8)	
	Description	See IT-600 Hardware Manual.	
Headset jack		4 poles in rounded shape	
Speaker		Monaural	
Microphone		Monaural	See note 2.
Digital camera			
	Number of pixels	Approximately 1,000,000 pixels	
	Device	1/4.5-type CCD color	
	Aperture	F3.5/F7.0 (2 steps switchover)	
	Focal distance	f = 3.29 mm (fixed)	
	Image capture range	30 cm to ∞	
LED light			
	Brightness	3300 mcd	

Continue.

Power			
Operation	Lithium-ion battery pack (HA-D20BAT or HA-D21LBAT)		
Memory backup	Lithium battery (rechargeable) on board		
Battery capacity	HA-D20BAT 1,850 mAH HA-D21LBAT 3,700 mAH		
Operating period	IT-600M30, M30C, M30-CN, M30C-CN, M30E2, M30E2-CN, M30C2, M30C2-CN	IT-600M30R, M30CR, M30R-CN, M30CR-CN, M30R2, M30R2-CN, M30CR2, M30CR2-CN	
	Approx. 11 hours (with HA-D20BAT)*1 Approx. 22 hours (with HA-D21LBAT)*1	Approx. 10 hours (with HA-D20BAT)*2 Approx. 20 hours (with HA-D21LBAT)*2	*1 based on the ratio of "standby:calculation:scan" at 20:1:1 when the CPU speed is set to auto power save mode and the backlight is turned off. *2 based on the ratio of "standby:scan:calculation:wireless" at 20:1:1:1 when the CPU speed is set to auto power save mode and the backlight is turned off.
Memory backup period (with Lithium battery only)	RAM : Approx. 10 minutes Clock : Approx. 72 hours or longer		- Lithium battery is fully charged. - At room temperature.
Memory backup period (with Lithium battery and Lithium-ion battery pack)	RAM : Approx. 72 hours with HA-D20BAT RAM : Approx. 72 hours with HA-D21LBAT		- After "VDET1" warning message is issued.
Lithium-ion battery pack charge period	Approx. 4 hours for HA-D20BAT Approx. 7 hours for HA-D21LBAT		- The power on the terminal is turned off. - At room temperature - The dedicated AC adaptor is used to power the terminal via battery charger or cradle.
Memory backup battery charge period	Approx. 4 days		- Time period until when the memory backup battery is fully charged. - Lithium-ion battery pack is being installed. - At room temperature.
Memory backup battery rated capacity	10 mAh		
Method to charge memory backup battery	Power supply by cradle	Yes	
	By battery pack (when terminal's power on)	Yes	
	By battery pack (when terminal's power off)	Yes	

Notes:
1. Orthogonal frequency-division multiplexing (OFDM) is a transmission technique based upon the idea of frequency-division multiplexing (FDM).
2. The microphone is not integrated in IT-600M30R2-CN and IT-600M30CR2-CN to comply with the Chinese radio related regulations. Both the models disable the capability of voice data transmission over Internet Protocol (VOIP).
3. Dead Pixels
   The LCD panel employed in this product uses high precision and substantial number of components which commonly cause a small number of the pixels not to light or to remain lit all the time. This is due to the characteristics of LCD panel yield in accuracy over 99.99% and permissible.

1.2 Library Configuration

The CASIO Software Development Kit ("SDK") for IT-600 series provides various libraries listed in the table.

Table 1.2

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
JPEG Library	Library that is used to handle and manipulate JPEG image functions.	Yes	-
FLINK Library	Library that is used to control and carry out transmission/reception of files between PC and other device.	Yes	Yes

Note:

The abbreviations used in the table are;

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

The names of the Dynamic Link Libraries for C++ and C#/VB for the device oriented libraries are listed in the table.

Table 1.3

Library	Dynamic Link Library	Dynamic Link Library (Class 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
JPEG Library	JpegCe.dll	None
FLINK Library	FlinkLib.dll	MoFlinkLib.dll

1.3 Development Reference Manuals

The CASIO Software Development Kit ("SDK") for IT-600 series includes the development reference manuals listed in the table.

Table 1.4

Development Manual	Description
Quick Start Guide	This reference manual.
Hardware Manual	Reference manual that describes hardware specifications in detail on each dedicated option and IT-300 handheld printer terminal
Software Manual	Reference manual that describes software specifications in detail for all the software integrated in IT-600 handheld printer terminal.
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.
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.

1.4　Sample Program

The following sample programs are included in the **IT-600 SDK**.

Table 1.5

Sample Program	Description
Common Device Control	
BLUETOOTHLIBSAMPLE	Connects the terminal to a Bluetooth printer and prints out data.
CAMERALIBSAMPLE	Takes pictures and displays them on the screen.
IMGLIBSAMPLE	Scans bar codes using the Imager with settings set with Imager setting file.
IMGLIBSAMPLE2	Program of IMGDemo.exe
OBRLIBSAMPLE	Reads a bar code using the Laser library.
PRNLIBSAMPLE	Prints out data on the built-in printer.
SYSTEMLIBSAMPLE	Demonstrates LED and buzzer functions.
JPEG Library	
JPEGSAMPLE	Displays Jpeg files.
FLINK Library	
FLINKLIBSAMPLE	Demonstrate infrared communication via FLINK protocol between two terminals.

Note:

Some of the sample programs such as **IMGLIBSAMPLE**, **IMGLIBSAMPLE2**, and **PRNLIBSAMPLE** in the table do not run because the respective devices are not integrated in the IT-600.

2. Prerequisites

2.1 Skills Required

The following skills are required by developers aiming to develop application software for the IT-600:

- Windows programming
- A good knowledge of one or more of the following:
    - Visual C++
    - Visual Basic .NET
    - Visual C#
    - Active Server Pages and web programming (not covered in detail in this guide)

The following skills or experiences are also desirable:

- Windows CE devices
- ActiveSync
- Some networking experience

2.2 Hardware Required

The following models of the IT-600 series and the dedicated options are available.
- IT-600

Table 2.1   Available models and the features

Model no.	Laser scanner	Wireless Communication		Digital Camera	Remark
		Bluetooth	IEEE802.11b/g		
IT-600M30 *	Yes	Yes	No	No	See note 1.
IT-600M30C *	Yes	Yes	No	Yes	
IT-600M30R *	Yes	Yes	Yes	No	
IT-600M30CR *	Yes	Yes	Yes	Yes	
IT-600M30E2	Yes	Yes	No	No	
IT-600M30C2	Yes	Yes	No	Yes	
IT-600M30R2	Yes	Yes	Yes	No	
IT-600M30CR2	Yes	Yes	Yes	Yes	
IT-600M30E2-CN	Yes	Yes	No	No	See note 2.
IT-600M30C2-CN	Yes	Yes	No	Yes	
IT-600M30R2-CN	Yes	Yes	Yes	No	
IT-600M30CR2-CN	Yes	Yes	Yes	Yes	

Notes:

1. The model with "*" will phase out as soon as its stock runs out, and be replaced by its successor model with "2" at the end of the model number.

2. "-CN" in the "Model" boxes denotes that the model is dedicated for China only.

- Dedicated Options
   - HA-D20BAT (Battery Pack)
   - HA-D21LBAT (Large-capacity Battery Pack)
   - AD-S15050BE (AC Adaptor for HA-D30CHG Cradle-type Battery Charger)
   - AD-S42120B (AC Adaptor for HA-D60IO USB Cradle and HA-D62IO Ethernet Cradle)
   - AD-S60160BE (AC Adaptor for HA-D36DCHG Cradle-type Dual Battery Charger)
   - DT-380USB (USB cable)
   - HA-D50BN (Laser Redirection Attachment)
   - HA-D60IO (USB Cradle)
   - HA-D62IO (Ethernet Cradle)
   - HA-D30CHG (Cradle-type Battery Charger)
   - HA-D32DCHG (Dual Battery Charger)
   - HA-D36DCHG (Cradle-type Dual Battery Charger)
   - HA-D51TG (Trigger Grip)
   - AC-CORD-EU (Power cord for AD-S42120B/Europe)
   - AC-CORD-US (Power cord for AD-S42120B/USA and Canada)
   - AC-CORD-TW (Power cord for AD-S42120B/Taiwan)
   - AC-CORD-KR (Power cord for AD-S42120B/Korea)
   - AC-CORD-AU (Power cord for AD-S42120B/Australia)

See the following page for each external view of the IT-600 and the dedicated options.
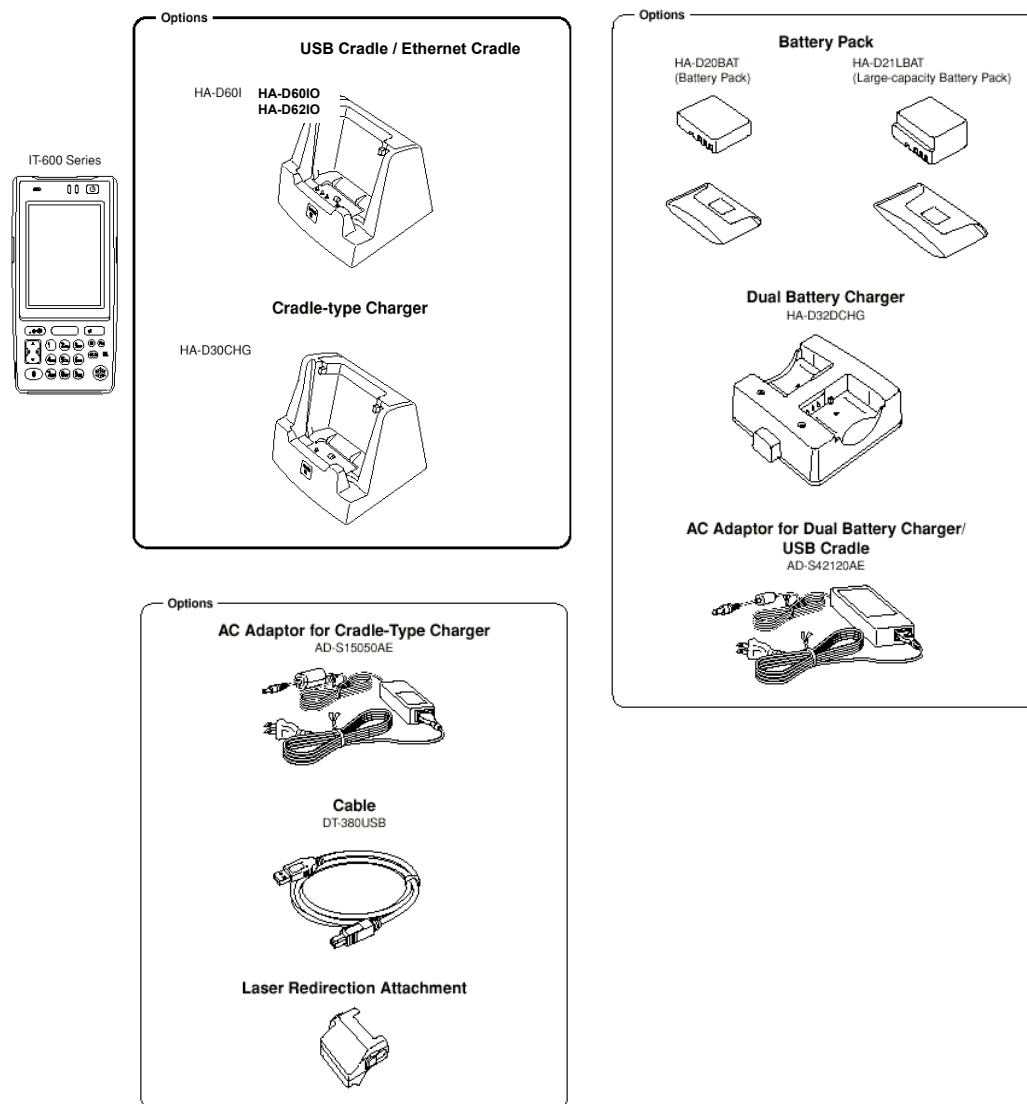
External views of the IT-600 and the options

Options

USB Cradle / Ethernet Cradle

HA-D60I **HA-D60IO**
         HA-D62IO

IT-600 Series

Cradle-type Charger

HA-D30CHG

Options

Battery Pack

HA-D20BAT   HA-D21LBAT
(Battery Pack)   (Large-capacity Battery Pack)

Dual Battery Charger
HA-D32DCHG

**AC Adaptor for Dual Battery Charger/
USB Cradle**
AD-S42120AE

Options

AC Adaptor for Cradle-Type Charger
AD-S15050AE

Cable
DT-380USB

Laser Redirection Attachment

Figure 2.1

2.3   Software Required

PC Operating System
- Microsoft Windows 2000 Professional Service Pack 4 or later
- Or Microsoft Windows 2000 Server Service Pack 4 or later
- Or Microsoft Windows XP Professional Service Pack 2 or later
- Or Microsoft Windows 2003 Server Service Pack 1 or later
- Or Microsoft Windows Vista (Business / Ultimate)
- Or Microsoft Windows 7
- Or Microsoft Windows Server 2008

The following software tools and libraries are required in order to develop software for the IT-600. Ensure that you download or purchase the correct Microsoft tools as appropriate.

C / C++
- Microsoft Visual Studio 2008 (not free of charge)
- Microsoft Visual Studio 2005 (not free of charge)
- Microsoft eMbedded Visual C++ 4.0
  Download for free from;
  http://www.Microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=1DACDB3D-50D1-41B2-A107-FA75AE960856
- Microsoft eMbedded Visual C++ 4.0 SP4
  Download for free from;
  http://www.microsoft.com/downloads/details.aspx?familyid=4A4ED1F4-91D3-4DBE-986E-A812984318E5&displaylang=en
- Microsoft ActiveSync 4.2 (or later)
  Download for free from;
  http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d3233efb4c&DisplayLang=en
- Microsoft Windows Mobile Device Center 6.1 (for Windows Vista)
  Download for free from;
  http://www.microsoft.com/downloads/details.aspx?familyid=46F72DF1-E46A-4A5F-A791-09F07AAA1914&displaylang=en

Visual Basic / Visual C#
- Microsoft Visual Studio 2008 (not free of charge)
- Microsoft Visual Studio 2005 (not free of charge)
- Microsoft Visual Studio .NET 2003 (not free of charge)
- Windows CE Utilities for Visual Studio .NET 2003 Add-on Pack 1.1
  From Microsoft web site, see
  http://www.microsoft.com/downloads/details.aspx?familyid=7ec99ca6-2095-4086-b0cc-7c6c39b28762&displaylang=en
- Microsoft ActiveSync 4.2 (or later)
  Download for free from;
  http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d3233efb4c&DisplayLang=en
- Microsoft Windows Mobile Device Center 6.1 (for Windows Vista)
  Download for free from;

http://www.microsoft.com/downloads/details.aspx?familyid=46F72DF1-E46A-4A5F-A791-09F07AAA1914&displaylang=en

3. Installing SDK to PC

3.1 Application Development

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

1. **Installing Development Platform**
   Install Microsoft's development platform which supports eMbedded Visual C++, Visual Studio 2005 and Visual Studio .NET 2003. For detail, refer to Chapter 2.3 "Software Required".

2. **Installing CASIO SDK**
   Install CASIO SDK and various libraries if necessary. For installation method, refer to Chapter 6.1 "Installing CASIO SDK Files".

3. **Connecting IT-600 to PC (via ActiveSync/Windows Mobile Device Center)**
   Connect the IT-600 to PC via Microsoft's ActiveSync (for Windows XP or any other OS before Windows XP) or via Windows Mobile Device Center (for Windows Vista or later). For connection method, refer to Chapter 5 "Connecting the IT-600 to PC".

4. **Setting Up the Development Environment**
   Copy all necessary CASIO libraries to the IT-600.
   For detail, refer to Chapter 6 "Setting Up the Development Environment".

5. **Installing the Device Emulator**
   Install the Device Emulator for the IT-600. For installation method, refer to Chapter 7 "Device Emulator". If not necessary to install, go to the next step "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 IT-600 via ActiveSync or Windows Mobile Device Center for check on the operability. For application development method and transferring your application, refer to Chapters 8 "eMbedded Visual C++" and 9 "Visual Studio".

3.2   Installing CASIO SDK Files

Download the CASIO IT-600 SDK 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:
- If you had already installed IT-600 SDK Ver. 1.xx, be sure to uninstall it before installing Ver. 2.xx.
- If any file of the IT-600 SDK Ver. 1.xx is remained in the following folders after uninstalling, delete it manually.

> C:\Program Files\CASIO\MBSYS
> C:\Program Files\Windows CE Tools\wce500

- If your PC runs in the Windows Vista or later OS, first you must disable the User Account Control ("UAC") by following the process below before installing the CASIO SDK Files.

   Case of using Windows Vista and Windows Server 2008
   - Navigate to **Control Panel → User Accounts → Enable or Disable the User Account Control**. Remove the check on **User Account Control (UAC) to protect your PC**, and then click **OK** button.

   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.

Installing ExportSDK

1. When the CASIO IT-600 SDK CD-ROM is inserted in the drive of your PC, the following menu screen appears automatically.

Figure 3.1

2. Click **Installation List** in Figure 3.1. The installation screen appears.

Figure 3.2

3. Click **IT-600 ExportSDK** to display the Setup Wizard. Choose any one of the buttons in the screen.

Installing Library

The IT-3100 Library is available for the below development platforms. The library can be installed for each development platform in the **Installation List** screen.

- Microsoft eMbedded Visual C++ 4.0
- Microsoft Visual Studio .NET 2003
- Microsoft Visual Studio 2005
- Microsoft Visual Studio 2008

Notes:
1. The Library header file (*.h) and the Import library file (*.lib) are installed in the following folder.
    C:\Program Files\CASIO\MBSYS\include   : Header file
    C:\Program Files\CASIO\MBSYS\lib\ARMV4I   : Import library file
2. The Class library DLL file (*.dll) is installed in the following folder.
    C:\Program Files\CASIO\MBSYS\WindowsCE
3. When the Library is installed in PC, the Help file (*.chm) is installed in the following folder.
    C:\Program Files\CASIO\MBSYS\HELP

The Help file can be accessed by navigating to **Start** menu → **All Programs** → **CASIO Basic Development Kit** → **Help**.

Installing Online Help

Besides the Help file described above, the Online Help is also available for the below development platforms. The installation of the Online Help is initiated in the **Installation List** for each development platform.

- Microsoft Visual Studio .NET 2003
- Microsoft Visual Studio 2005
- Microsoft Visual Studio 2008

After the installation is complete, Microsoft Visual Studio starts up. The Online Help file can be accessed by navigating to **Help** → **Contents** menu.

Installing Sample Program

When the **Sample** is chosen in the **Installation List**, the sample program folder in the CD-ROM appears. The Sample program folder is available for each development platform. Copy one of the folders you wish to use into your PC.

- EVC for Microsoft embedded Visual C++
- VS2003 for Microsoft Visual Studio.NET 2003
- VS2005 for Microsoft Visual Studio 2005
- VS2008 for Microsoft Visual Studio 2008

If your sample program is with "Read-only" attribute set effect. Be sure to disable the attribute before using it.

4. Connecting Power Supply to HA-D60IO, HA-D62IO

4.1 HA-D60IO

Use the dedicated AC adaptor (AD-S42120B) for power supply to the HA-D60IO USB cradle. Make sure to connect the AC adaptor to the USB cradle before starting communication between the IT-600 and PC via the cradle. Follow the steps below to set power supply to the IT-600 using the dedicated AC adaptor.
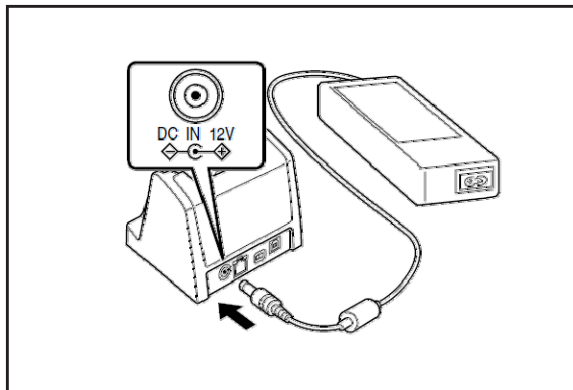
1. Plug the AC adaptor into the AC adaptor jack where "DCIN12V" is printed by on the back of the cradle. See Figure 4.1.
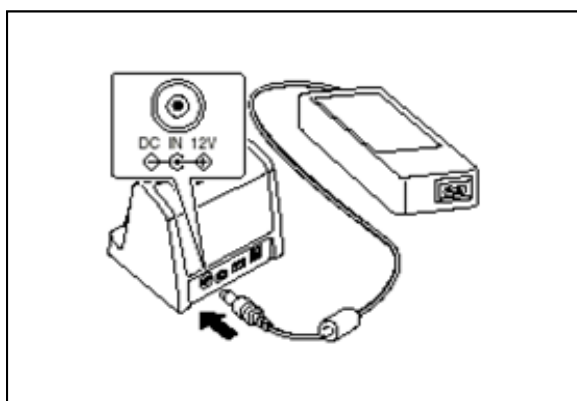
Figure 4.1

2. After connecting the power cable to the AC adaptor, plug in the plug to an electrical outlet.
3. Make sure the selector switch on the back of the cradle is set to position B.
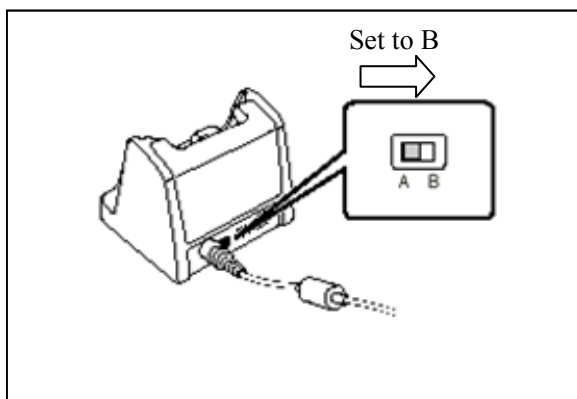
Figure 4.2

4. Connect USB cable (DT-380USB) to USB client port on the back of the cradle, and then connect the other end of the cable to PC. USB host port is used when connecting the cradle with other USB peripheral device.
5. Align the USB cradle mount holes on the back of the IT-600 with the mount hooks on the cradle after aligning the contacts on the bottom of the IT-600 with the power contacts of the cradle. The power indicator LED on the front of the cradle will light in green if the IT-600 has been properly mounted.
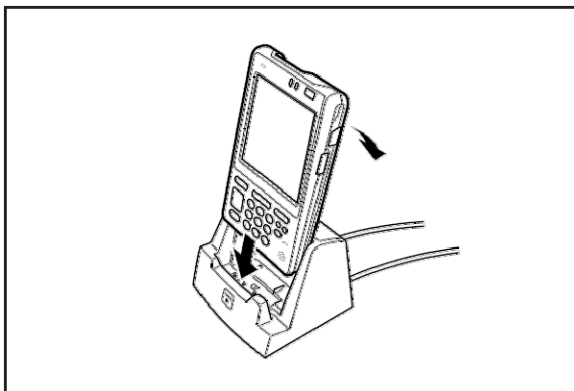
Status of Indicator 1 on IT-600

Orange： Charging
Red ： Standby due to battery pack error or the surrounding temperature is out of the
range (charging begins when the temperature returns within the range.)
Green ： Charging complete

Important notes:

- Make sure to first remove the IT-600 from the cradle when switching the selector switch on the cradle.
- Never short out the power contacts of the cradle. This damages the cradle.
- Do not subject the IT-600 and cradle to vibration or impact during communication. This results communication to be interrupted.
- When mounting the IT-600, securely attach it to the mount hooks of the cradle and check that the power indicator LED on the front of the cradle lights green. Charging battery pack or carrying communication will not proceed properly if it is not mounted properly.

4.2   HA-D62IO

Use the dedicated AC adaptor (AD-S42120B) for power supply to the HA-D62IO Ethernet cradle. Make sure to connect the AC adaptor to the Ethernet cradle before starting communication between the IT-600 and PC via the cradle. Follow the steps below to set power supply to the IT-600 using the dedicated AC adaptor.

1. Plug the AC adaptor into the AC adaptor jack on the back of the Ethernet cradle.

   Figure 4.3

2. After connecting the AC adaptor to the power cable, plug the plug of the power cable into an electrical outlet.
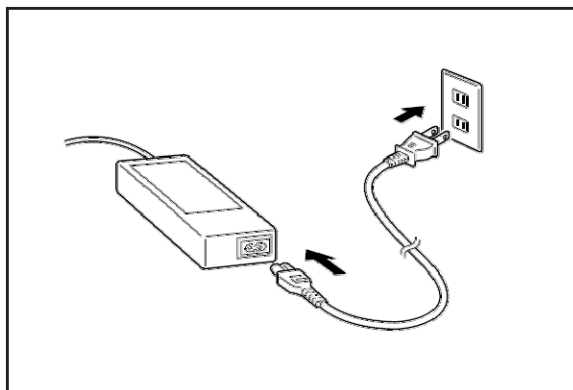
   Figure 4.4

3. Set the selector switch on the back of the Ethernet cradle to the port that will be used. Set the switch to "LAN" to use the LAN port or to "USB" to use the USB port.
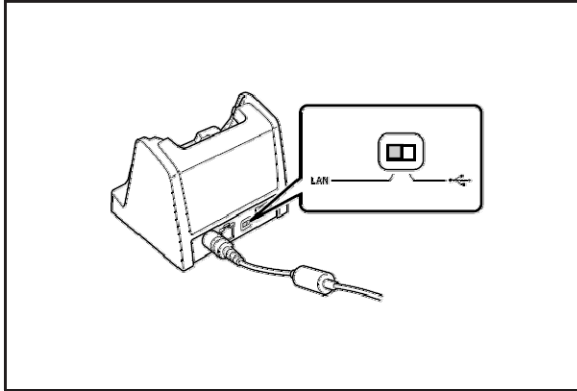
Figure 4.5

4. Before using the cradle ports, remove the caps from the ports. When using a LAN, connect one end of the LAN cable to the LAN port and the other end to the PC or hub. When using a USB connection, connect one end of the USB cable (DT-380USB) to the USB port and the other end to the computer.
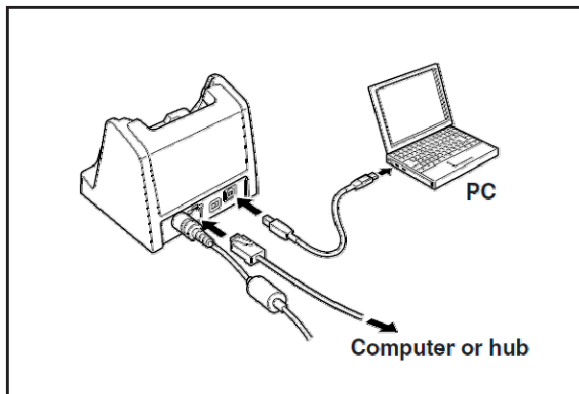
Figure 4.6

5. Align the contacts on the underside of the IT-600 with the power supply contacts on the Ethernet cradle and then set the IT-600 into the cradle so that mount holes in the back of the IT-600 are aligned with the mount hooks on the cradle. Once the IT-600 is properly set in the cradle, the power LED on the front of the Ethernet cradle lights green.

Figure 4.7

Status of Indicator 1 on IT-600

Orange： Charging
Red ： Standby due to battery pack error or the surrounding temperature is out of the range (charging begins when the temperature returns within the range.)
Green ： Charging complete

Important notes:
- Always remove the IT-600 from the Ethernet cradle before changing the LAN/USB selector switch setting.
- Never short out the power contacts of the cradle. This damages the cradle.
- Do not subject the IT-600 and cradle to vibration or impact during communication. This results communication to be interrupted.
- When mounting the IT-600, securely attach it to the mount hooks of the cradle and check that the power indicator LED on the front of the cradle lights green. Charging battery pack or communication will not proceed properly if it is not mounted properly.
- The LAN and USB connections cannot be used concurrently.
- Always cap ports that are not being used. Using the Ethernet cradle while the ports are uncapped can cause damage.

5. Connecting the IT-600 to PC

To make connection establishment with PC, use one of the methods, depending on the OS your PC runs, described below.

- **ActiveSync** (for Windows XP or any other OS earlier)
  Use the ActiveSync to connect the IT-600 to PC if the PC runs in Windows XP or other OS earlier than Windows XP. The ActiveSync can be downloaded at the URL below.
  http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d32 33efb4c&DisplayLang=en

- **Windows Mobile Device Center** (for Windows Vista or later)
  Use the Windows Mobile Device Center to connect the IT-600 to PC if the PC runs in Windows Vista OS. The Windows Mobile Device Center ("WMDC") can be downloaded at the URL below.
  http://www.microsoft.com/downloads/details.aspx?familyid=46F72DF1-E46A-4A5F-A791-09F 07AAA1914&displaylang=en

5.1   ActiveSync Connection

In nearly all cases during development work you will be communicating with the IT-600 via ActiveSync connection. There are many ways to connect the IT-600 to PC via ActiveSync. You can download ActiveSync from the following Microsoft web site:

http://www.microsoft.com/windowsmobile/activesync/default.mspx

5.2 ActiveSync Connection via USB

If you have already installed ActiveSync and connected the IT-600 to the PC via direct USB, You may skip the Chapter 5.2.1. You already have the USB driver and ActiveSync in your development environment.

5.2.1 Installing ActiveSync for the First Time

1. Install ActiveSync first. Initiate the MSI file of ActiveSync.

Figure 5.1

2. Click **Next >** button.
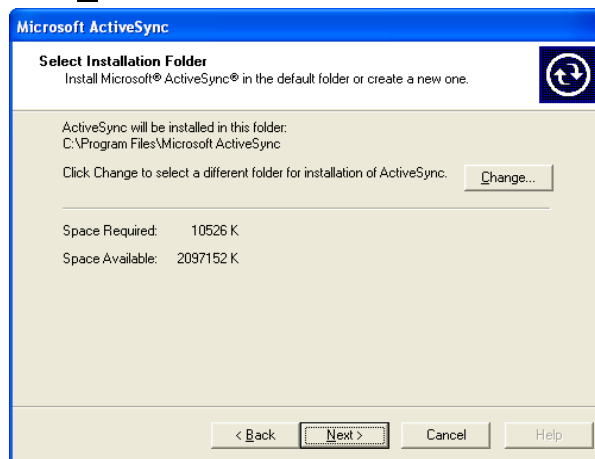
Figure 5.2

3. Hold the installation when the menu in Figure 5.3 is displayed.
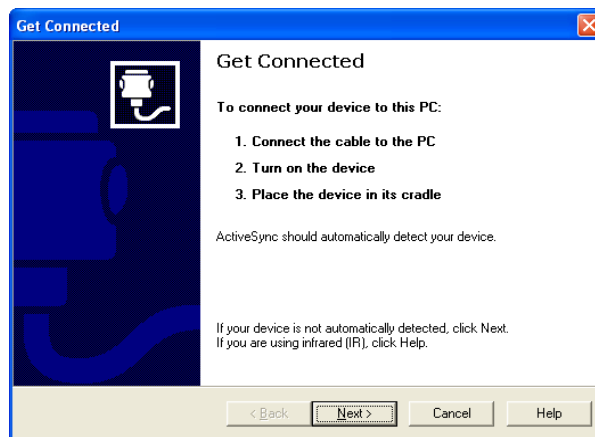
Figure 5.3

4. Connect the USB cable to the PC and the other end to the USB cradle and also the AC adaptor to the USB cradle.
5. Put the IT-600 on the cradle and confirm that the green LED on the front of the cradle is lit. If not, be sure the IT-600 is positioned firmly on the cradle.
6. When the IT-600 is mounted on the USB cradle, a dialog is displayed to prompt you to install the suitable driver. Download the USB driver "wceusbsh.inf" and "wceusbsh.sys" from the CASIO Web Site and copy to the appropriate folder.
7. Choose **No, not this time** radio button in Figure 5.4 and then click **Next >** button.

Figure 5.4

8. Then, choose **Install from a list or specific location** radio button in the menu.
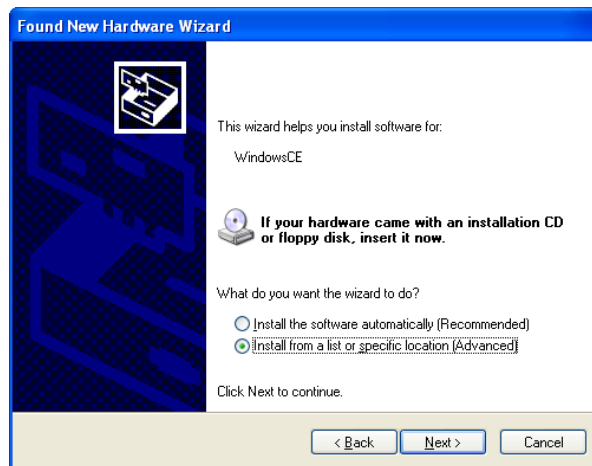
Figure 5.5

9. Click **Next >** button.
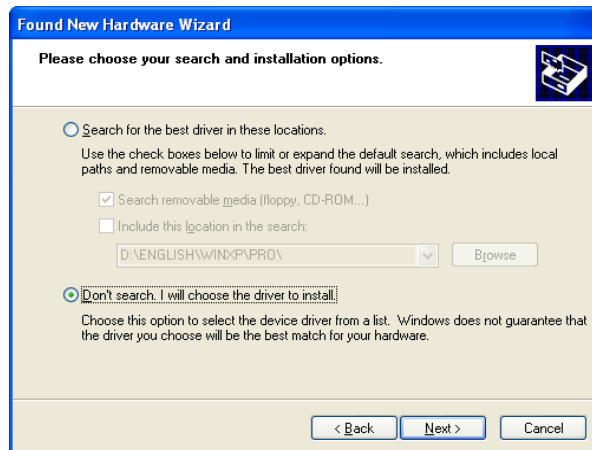
Figure 5.6

10. Choose **Windows CE USB Devices** icon.
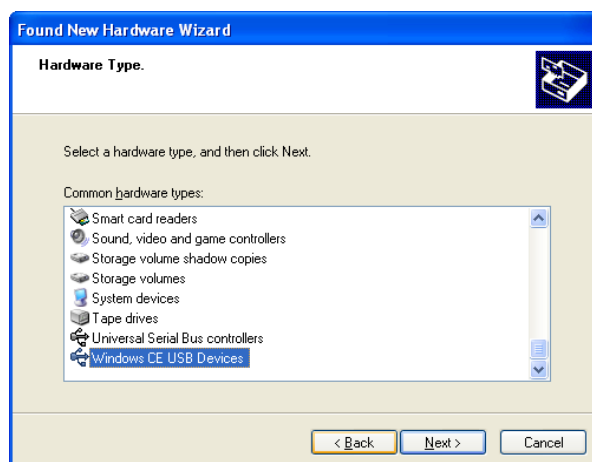
Figure 5.7

11. Click **Have Disk…** button.
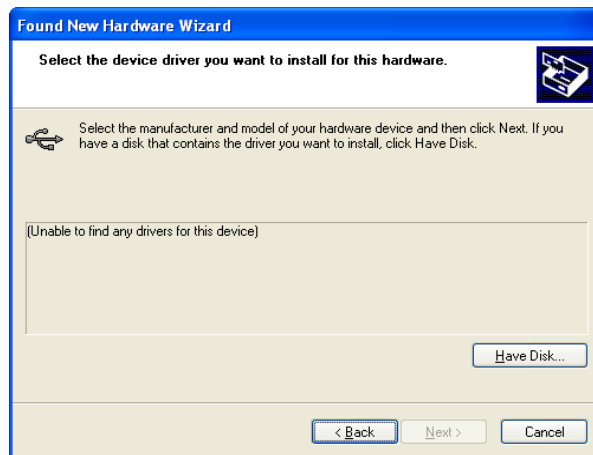
Figure 5.8

12. Click **Browse…** button. And choose "wceusbsh.inf" from the folder you created.
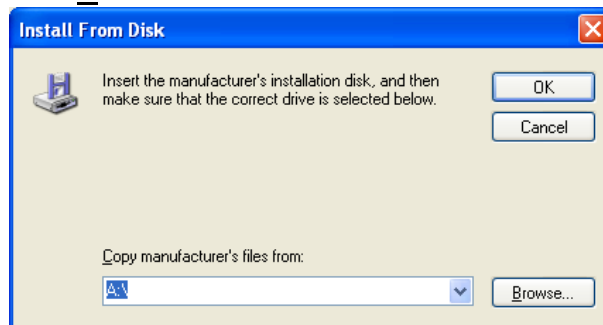
Figure 5.9

13. Then the installation of the driver will start.
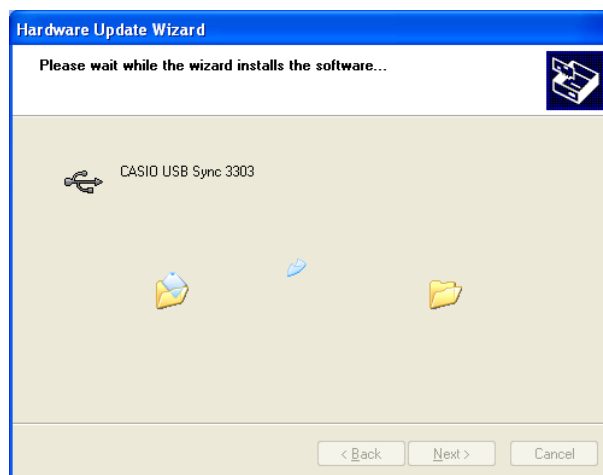
Figure 5.10

14. Click **<u>C</u>ontinue Anyway** button.

Figure 5.11

15. A menu might be displayed to prompt to install "wceusbsh.sys". This happens if "wceusbsh.sys" is not in the same folder where "wceusbsh.inf" is located. Download this file from the CASIO Web Site and follow the menu and then specify the location of "wceusbsh.sys".

16. Now the installation of the driver is complete.

Figure 5.12

17. Now go back to the ActiveSync Installation Wizard that was left on the desktop. Click **Next >** button.
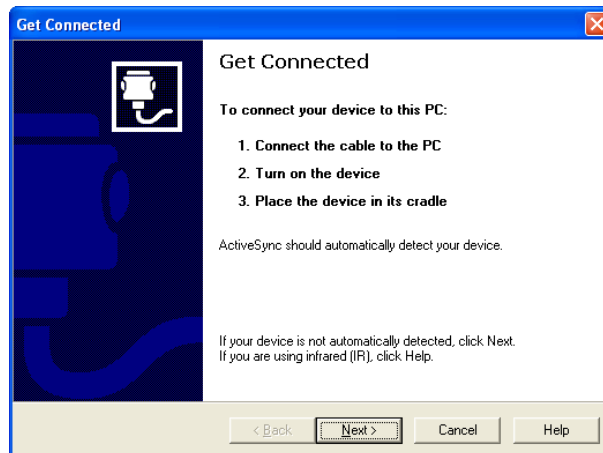
Figure 5.13

18. Now the connection is being established. You can select either one according to your need. Then click **Next >** button.

Figure 5.14

19. Now the connection is complete. You can start up eMbedded VC++ and create a program and deploy it to the IT-600.
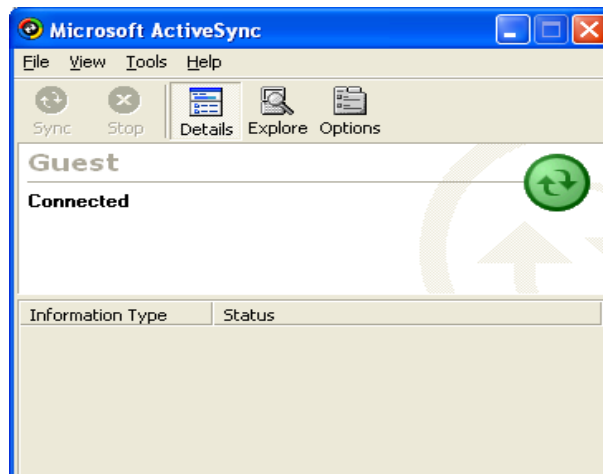
Figure 5.15

5.2.2 If ActiveSync Is Already Installed

This is the procedure if ActiveSync is already installed in the PC. Let the PC recognizes the IT-600 and install the driver.

1. Open the pull-down menu navigating to **File → Connection Settings….** See Figure 5.16.

Figure 5.16

2. Take out the check (pointed out by the arrow) on **Allow USB connection with this desktop computer. USB is available**.
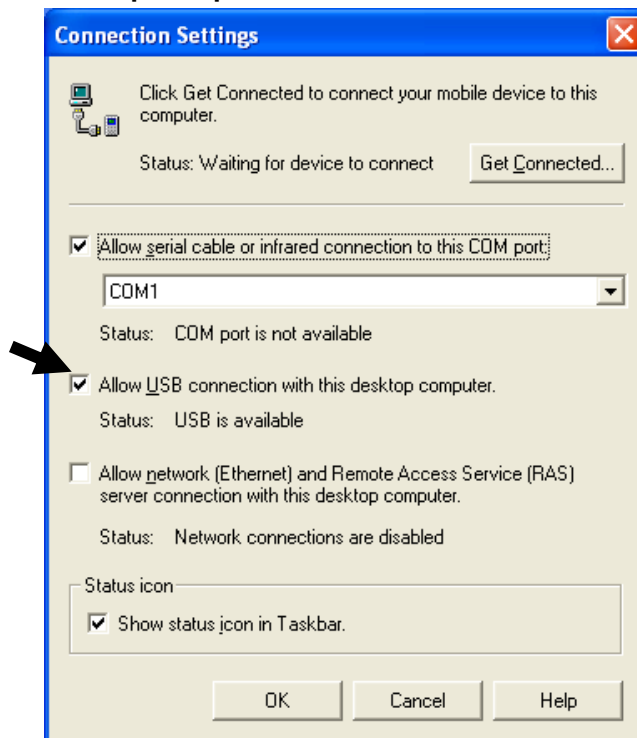
Figure 5.17

3. On the IT-600, choose **PC Connection** tab. Confirm that PC Connection is set to "USB Default". If not, choose **USB Default** and tap **OK** button.

Figure 5.18

4. When the IT-600 is mounted on the USB Cradle, a menu to prompt to install the driver is displayed. Follow the same steps in Chapter 5.2.1.

Figure 5.19

5.2.3 ActiveSync Connection via IrDA

If the PC supports an IrDA interface, it is possible to connect the IT-600 to the PC via IrDA interface using ActiveSync.

Follow the steps below:
1. Choose **PC Connection** in the Control Panel on the IT-600.
2. Set **PC Connection** to **IrDA**.
3. Set the COM port of ActiveSync on the PC to the IrDA port.
4. Place the IrDA port located on the left side of the IT-600 facing the IrDA port on the PC directly. Communication can be established if the distance is in the range of zero to approximately 1 m. In case of 4Mbps rate, the maximum distance is approximately 30 cm.
5. From **Start** menu, navigate to **Programs → Communication → ActiveSync** and then start up ActiveSync.

5.3 USB Connection via Windows Mobile Device Center

To establish connection via USB interface with PC runs in Windows Vista, use Windows Mobile Device Center ("WMDC"). The IT-600 with the factory-setting (default) does not support the WMDC. Follow the procedure below to change the setting.

Note that the CAB file, **USBClientIT600.110.CAB**, must be installed in the IT-600 prior to establishing connection with the IT-600 via Windows Mobile Device Center. For installation method, refer to Chapter 6.1 "Installing CAB Files".

Procedure
1. Close all applications running on the IT-600.
2. Navigate to **Settings → Control Panel → USB Connection**.
3. Click **Connect Utility** tab.
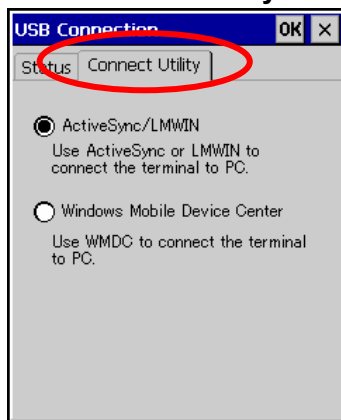
Figure 5.20

4. Choose **Windows Mobile Device Center** radio button and then click **OK** button.
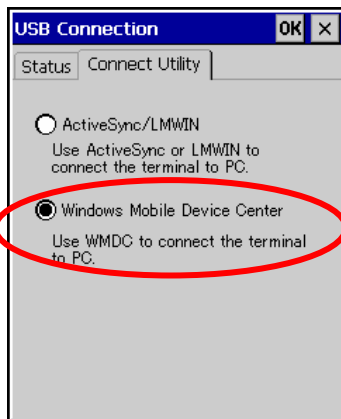
Figure 5.21

5. A dialogue asking your final confirmation appears. Click **YES** button.
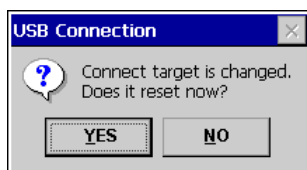
Figure 5.22

---

6. The IT-600 starts up again. Mount the IT-600 on the cradle, and then follow a message appeared in the WMDC on the PC.

Notes:
- To resume the factory default setting, choose **ActiveSync/LMWIN** radio button in Step 3 on the previous page, and start up the IT-600 again.
- The WMDC version 6.1 or later will support the connection establishment via USB interface. Any other versions of the WMDC earlier are not interoperable with Windows CE devices.

5.4   ActiveSync Connection via WLAN

This operation works with ActiveSync Version 3.8 or earlier. Later versions of ActiveSync do not support the LAN ActiveSync setting menu and thus it is not possible for IT-600 to establish connection with PC via WLAN or wired LAN.
The quickest and easiest way to establish connection between the IT-600 and PC for development purpose is to use IEEE802.11b/g WLAN. In this configuration, models with WLAN module integrated (IT-600M30R, M30CR, M30R2, M30CR2, M30R2-CN, M30CR2-CN) are required. Follow the steps below to establish the connection.

1. Establish connection first between the IT-600 and PC using any method so far described in this guide for connection establishment either via IrDA or via USB cradle. With the Ethernet cradle, see Chapter 5.8 "ActiveSync Connection via Ethernet".
2. Initiate the WLAN Settings tool by navigating to **Settings** → **Control Panel** → **WLAN Settings**.
3. Click **Basic Settings** tab and enter Access-Point in **SSID** field which you want to connect if you already know the SSID or the Access-Point is not broadcasting its SSID.
4. If you wish to choose a desired Access-Point from the **SSID** pull-down menu, click **Search** button and initiate the **NetSearch** tool. It will search all Access-Points which are broadcasting SSID and display a list as shown in Figure 5.24.
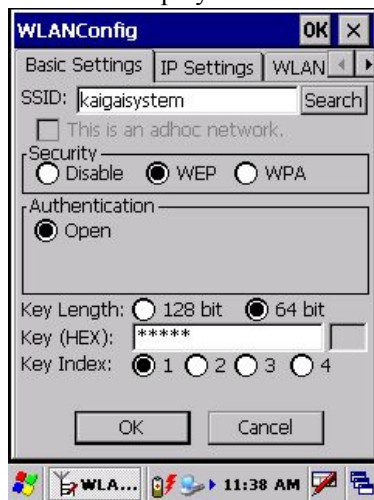

Figure 5.23

5. If you double tap one of the SSIDs in the list (see Figure 5.24), the SSID will be input in the SSID field in **Basic Settings** tab (see Figure 5.23) of **WLANConfig** (the WLAN Settings toll). Set up the rest of parameters as required.
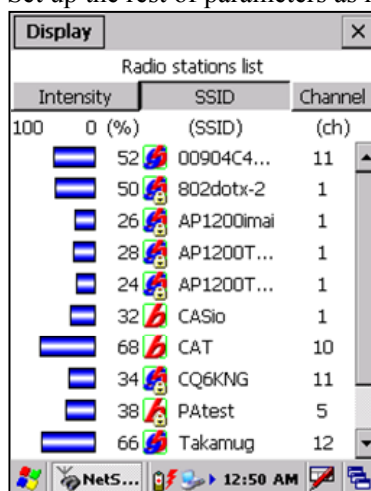

Figure 5.24

- The listed stations can be sorted by field intensity, station name (SSID) and channel.
- Field intensity appears in green while the station is connected.
- Information appeared in Figure 5.24 is updated every five seconds.
- The remote station's WLAN icon, either IEEE802.11b or IEEE802.11g, appears at the front of each station name.
- A key symbol icon appears for station that uses encrypted communication.

Table 5.1 Menu configuration

Menu	Description
Display	
List	Displays remote station list.
Details	Displays screen showing information on details of remote stations.
Options	Displays screen for setting remote station parameters.
Version	Switches address bar display.

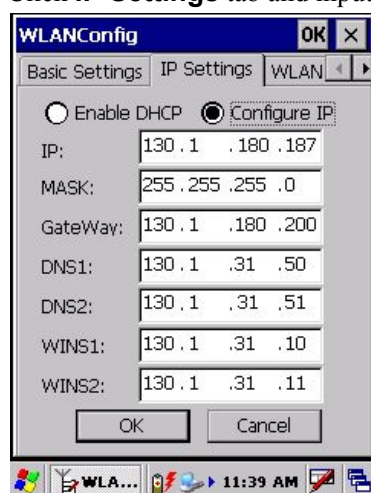6. Click **IP Settings** tab and input addresses in each field as required.

Figure 5.25

7. On the PC, make sure that **Allow network…** checkbox is checked in the ActiveSync setting. Allow network setting is only possible for ActiveSync 3.8 or earlier version.
8. On the IT-600, navigate to **Start → Programs → Communication → LAN ActiveSync** to initiate the connection. Ensure that **Network Connection** is the name of the connection method and that **Connect to** line is the name of your PC. Click **Connect …** button and then the connection should be established showing the screen in Figure 5.26.
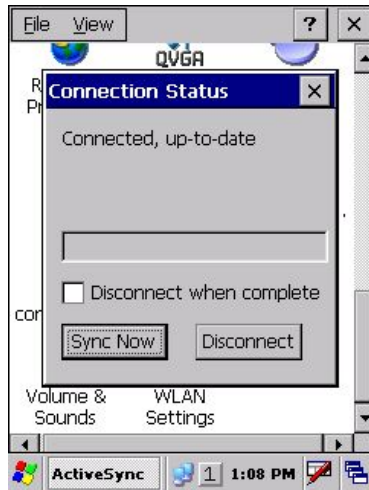
Figure 5.26

5.5 Bluetooth Connection

There are many peripherals such as USB dongles and PC Cards on the market that will allow you to add a Bluetooth serial port to a PC. This manual only covers the IT-600 side of the connection and assumes that you have a suitably configured Bluetooth COM port available on the PC. Your PC may require a Passkey during connection; if so, you will be prompted on the IT-600 at some point to enter the Passkey before the connection can be completed.

1. Establish connection with the PC using the cradle as described earlier in this manual.
2. On IT-600, navigate to **Start → Settings → Control Panel → Bluetooth Connection**.
3. After a few seconds, a list of detected Bluetooth devices should appear. Identify the PC amongst these and double click its entry in the list.
4. A list of available services for the PC will appear. **Bluetooth Serial Port** should be among them (the exact name may vary depending on the Bluetooth hardware you are using on the PC). Click and hold on the serial port entry and a pop-up menu should appear with an entry called **Use to connect for ActiveSync**. Click this. The icon should change to ActiveSync icon.
5. Click **Bluetooth Serial Port** (or whatever the specific item is on your PC) and the ActiveSync connection to the PC should be established.
6. If you click and hold on the serial port icon in the window that displays the PC side services, you can choose the **Add Shortcut** item to create a shortcut to this connection.
7. Click the radio icon (the blue circle) and choose **Shortcut**. Click and hold the shortcut you created in step 6 and click **Auto Connection** in the pop-up menu in Figure 5.27. The ActiveSync connection will then be launched as soon as you start the **Bluetooth Connection** utility in an access later.
8. To disconnect the ActiveSync session it is best to double-click the connection icon in the Taskbar and click **Disconnect**.
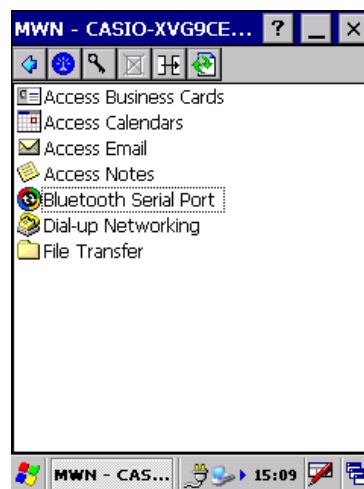
Figure 5.27   Figure 5.28

5.6 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 IT-600. The following shows the steps to initiate.

1. Configure a network connection on the IT-600.
2. Double click **My Computer**.
3. Type \\xxxx\ where xxxx is the network name of the PC.
4. A network logon dialog box will appear.
5. Enter a valid User ID, Password and Network Domain.
6. All shared network drives on the PC will be displayed and you will be able to copy files freely between them and the IT-600.

5.7　Direct TCP/IP Connection from Visual Studio

If you have a network connection to the IT-600 for example via WLAN or the Ethernet cradle, then you can establish a direct link to the development PC without using ActiveSync.

For Visual Studio .NET 2003
You require the WindowsCE Utilities add-on pack (described in Chapter 2.3). Refer to the readme file supplied with the add-on pack for details on how to set up the connection.

For Visual Studio 2005
1. Download the files listed below to the IT-600.
   - 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 IT-600:
   　\Windows
2. Run **ConmanClient2.exe** on the IT-600.
3. Set the device IP address in Visual Studio 2005.
4. Navigate to **Tools** in the main menu of Visual Studio 2005 → **Options…** → **Device Tools** → **Devices**.
5. Choose **IT-600 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 5.29.

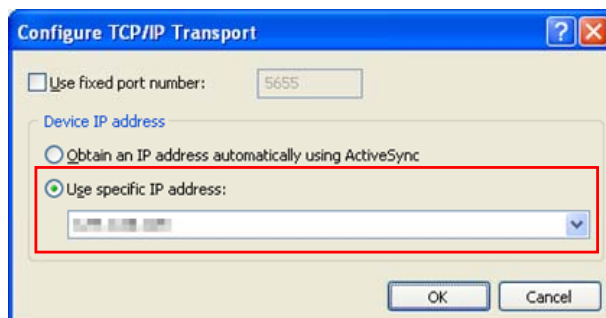

Figure 5.29

7. Run **CMAccept.exe** on the IT-600.
8. Navigate to **Tools** in the main menu of Visual Studio 2005 → **Connect to Device…**.

9. Choose **IT-600 Device** in the list of **Devices:** and click **Connect** button. The screen in Figure 5.30 if appear indicates the success of connection establishment.
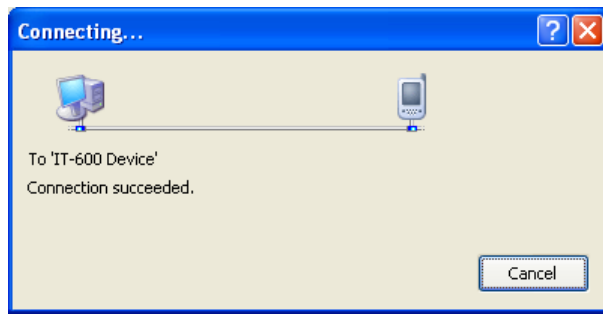

Figure 5.30

5.8   ActiveSync Connection via Ethernet

This operation works with ActiveSync Version 3.8 or earlier. Later versions of ActiveSync do not support the LAN ActiveSync setting menu and thus it is not possible to connect the IT-600 to PC via WLAN or wired LAN.

With ActiveSync version 3.8 or earlier version, another way to establish wireless connection for models without the WLAN module integrated (IT-600M30, M30C, M30E2, M30C2, M30E2-CN, M30C2-CN) is to use the HA-D62IO Ethernet cradle that makes a high speed LAN access possible. Follow the steps below to establish connection between the IT-600 and PC via the Ethernet cradle.

1. Establish partnership first between the IT-600 and PC using any method so far described in this guide (connection establishment via either IrDA, USB cradle or Ethernet cradle).
2. Connect the dedicated AC adapter to the Ethernet cradle as described in Chapter 4.2.
3. Connect one end of the network cable to the Ethernet cradle and the other end to the network hub.
4. Make sure the selector switch on the back of the HA-D62IO Ethernet cradle is set to the position "LAN". See Figure 5.31 below.
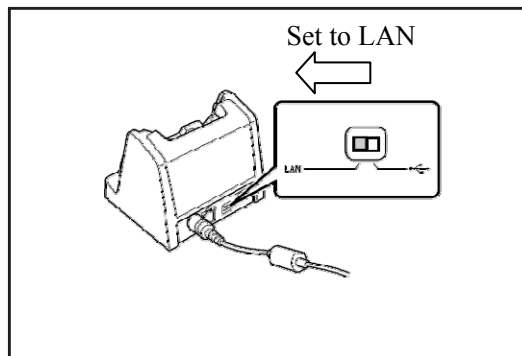

   Figure 5.31

5. Navigate to **Start → Setting → Control Panel → Network and Dial-up Connections**.
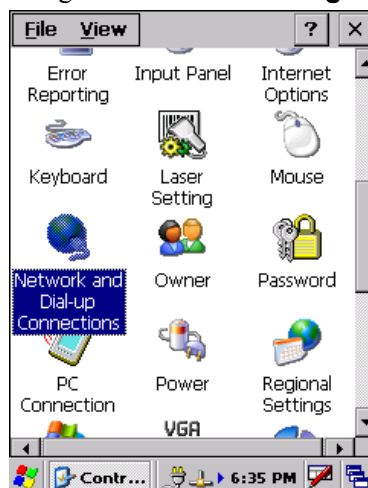

   Figure 5.32

6. The following screen will appear. Double click **AX887721**.

Figure 5.33

7. The following TCP/IP screen appears. Set all the parameters in **IP Address** and **Name Servers** tabs as required and then click **OK** button.
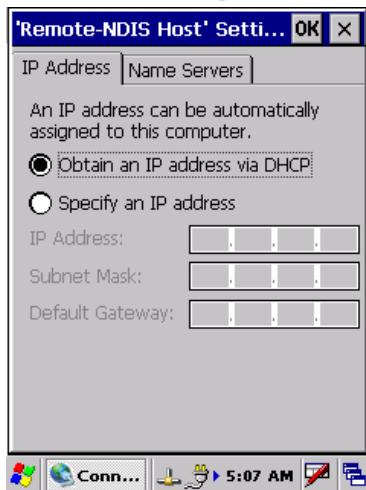

Figure 5.34

8. Once the connection is established "×" will disappear on the network icon in the Taskbar.
9. On the PC, make sure that **Allow network…** checkbox is checked in the ActiveSync setting.
10. On the IT-600, navigate to **Start → Programs → Communication → LAN ActiveSync** to initiate the connection. Make sure in the popup ActiveSync menu box that **Network Connection** is the selected connection method and **Connect to:** field is the name of your PC. Click **Connect …** button and then the connection should be established.

6. Setting Up the Development Environment

6.1 Installing CAB Files

1. After installing the library files, the CAB files in Table 6.1 will be installed in the folder below.
   C:\Program Files\CASIO\MBSYS\CAB

Table 6.1

Library	CAB file	Preinstalled
System Library	en_SystemLib.ARMV4I.CAB	Yes
Laser Scanner Library	en_OBReadLib.ARMV4I.CAB	Yes
Bluetooth Library	en_BluetoothLib.ARMV4I.CAB	Yes
Camera Library	en_CameraLib.ARMV4I.CAB	Yes
Imager Library	en_ImagerLib.ARMV4I.CAB	Yes
JPEG library	enJPEG.ARMV4I.CAB	Yes
FLINK library	en_Flink.ARMV4I.CAB	Yes (note 2)

Notes:
1. The library with "Yes" in "Preinstalled" column is preinstalled in the IT-600 and in the Device Emulator. Thus, it is not necessary to install those libraries, unless the library has been updated or changed.
2. The CAB file, en_Flink.ARMV4I.CAB, in the table does not operate for the IT-600. Use the FlinkLib.dll installed by default in the terminal.

2. Download the CAB file in Table 6.2 from the following site.
   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.)

Table 6.2

CAB file	Description
USBClientIT600.110.CAB	USB client supported by Windows Mobile Device Center

3. Copy all the CAB files (except the en_Flink.ARMV4I.CAB) in Table 6.1 and Table 6.2 to any folder in the IT-600 via ActiveSync.
4. Carry out each CAB file.
5. When the installation starts, the installation status will appear.

6.2 eMbedded Visual C++ 4.0

The **ExportSDK** for IT-600 is required to develop application software with eMbedded Visual C++ 4.0 (see note 1). Follow the steps below to install it.

1. Double click **IT-600_SDK.msi** file (see note 2) and follow the prompts appeared on the screen to install the SDK.
2. When prompted asking you to choose either **Custom** or **Complete** installation, choose **Complete**.
3. When the installation is complete, start up eMbedded Visual C++ 4.0.
4. Go to Chapter 8 and follow the instructions to verify that the SDK has been installed correctly.

If eMbedded C++ has been installed in your PC already, you will notice that you now have a new SDK and, once you choose that new SDK, a new target device (IT-600) in the comb-box menu in the Toolbar. Also, if you use any of the Remote Tools in eVC++ then you will find IT-600 is listed as a new target (for example, try the Remote Registry Editor).

Notes:
1. If eMbedded Visual C++ 4.0 is used to develop application software, be sure to install Service Pack 4 prior to the development.
2. Other SDK (e.g. standard SDK etc.) released before **ExportSDK** for IT-600 is also operable.
3. If **IT-600_SDK** is installed when standard SDK has been installed already, the following dialog box appears for warning.
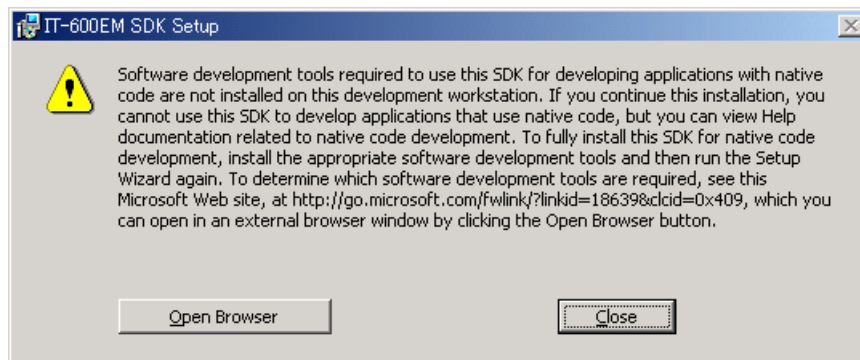

Figure 6.1

4. Application software developed using MFC (Microsoft Foundation Class) for CASIO IT-10 is not operable on the IT-600.
5. Any application developed not using MFC is operable on the IT-600.

6.3 Visual Studio 2005

There is no actual SDK available for Visual Studio as such. However, the CASIO libraries have been released for VB .NET and C#. See Chapter 9 for basic usage instructions. In this chapter, the remote debugging procedure using the IT-600 for application development in VB .NET and C# environments is explained.

1. Establish connection with the IT-600 via ActiveSync.
2. Open the application project for VB .NET or C# in Visual Studio 2005.
3. Click the button in square box drawn by red line (see Figure 6.2) to make sure that Visual Studio 2005 has recognized the connection established with the IT-600 via ActiveSync. If it does not, start up ActiveSync again to establish connection.
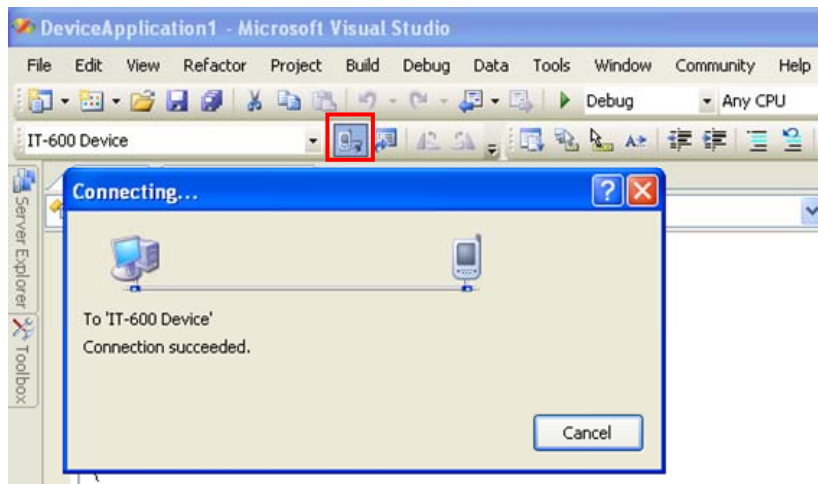
Figure 6.2

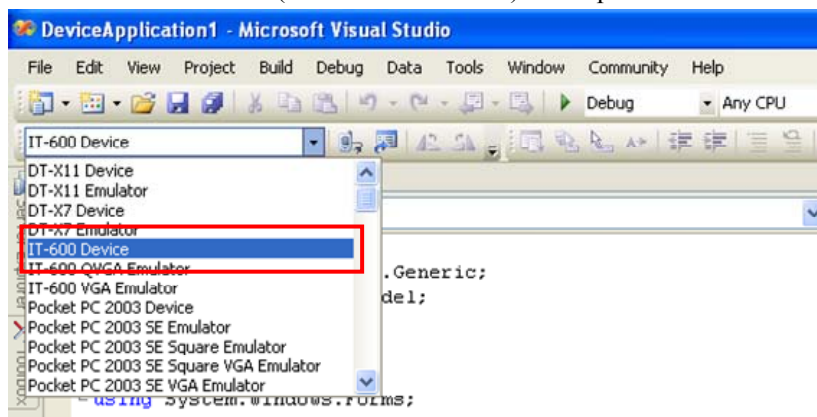4. Choose **IT-600 Device** (or **DT-X11 Device**) in the pull-down menu box in Figure 6.3.

Figure 6.3

5. If once the debugger has started, debugging for the application can be carried out while checking each operation by the application running on the IT-600.

6.4 Visual Studio .NET 2003

There is no actual SDK available for Visual Studio as such. However, the CASIO libraries have been released for VB .NET and C#. See Chapter 9 for basic usage instructions. Microsoft has released an add-on for Visual Studio .NET 2003 that allows you to set the target CPU for a connected device (Visual Studio is unable to detect the target CPU of non-Pocket PC devices). Follow the steps below to install the add-on pack.

1. Download "Windows CE Utilities for Visual Studio .NET 2003 Add-on Pack 1.1" from the site described in Chapter 2.3 "Software Required".
2. Establish connection via **ActiveSync** between the IT-600 and PC using any of the methods described in this guide.
3. Navigate to **Tools → Select Windows CE Device CPU**.
4. In **Select the device architecture** pull-down menu box, choose ARMV4I.
5. Click **Configure**.
6. Re-start Visual Studio .NET 2003.

You will now, for example, be able to choose **Deploy <appname>** from the **Build** menu and your project will be directly deployed to the IT-600. You will now also be able to remotely debug applications over your ActiveSync connection.

7. Device Emulator

The **Device Emulator** provides application developers with an environment that without having actual device available on hand the application developer can debug basic functions and performances of application and at source level.

7.1 Software Required

The **Device Emulator** requires the software(s) listed below before installing the emulator.

Using Visual Studio 2008 or Visual Studio 2005

- ActiveSync 4.2 or a later version (If required)
  http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d3233efb4c&DisplayLang=en
- Visual Studio 2008 or Visual Studio 2005 (Required)
- CASIO IT-600 SDK (Required)
- Standalone Device Emulator 3.0 (Optional. See note 2.)
  http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=a6f6adaf-12e3-4b2f-a394-356e2c2fb114

Using Visual Studio.NET 2003

- ActiveSync 4.2 or a later version (If required)
  http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d3233efb4c&DisplayLang=en
- Standalone Device Emulator 3.0 (If required. See notes 1 and 2.)
  http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=a6f6adaf-12e3-4b2f-a394-356e2c2fb114
- Visual Studio .NET 2003 (Required)
- CASIO IT-600 SDK (Required)

Using eMbedded Visual C++ 4.0

- ActiveSync 4.2 or a later version (Required)
  http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d3233efb4c&DisplayLang=en
- Standalone Device Emulator 3.0 (If required. See notes 1 and 2.)
  http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=a6f6adaf-12e3-4b2f-a394-356e2c2fb114
- Microsoft eMbedded Visual C++ 4.0 (Required)
  http://www.Microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=1DACDB3D-50D1-41B2-A107-FA75AE960856
- Microsoft eMbedded Visual C++ 4.0 ServicePack4 (Required)
  http://www.microsoft.com/downloads/details.aspx?familyid=4A4ED1F4-91D3-4DBE-986E-A812984318E5&displaylang=en
- CASIO IT-600 SDK (Required)

Notes:
1. The software is not required if your PC has already **Visual Studio 2005** installed.
2. To use Microsoft Device Emulator 3.0, follow the steps below.

    2-1. Install the IT-600 **ExportSDK** and the Device Emulator in IT-600 SDK.

    2-2. Download Microsoft Device Emulator 3.0 and install it.

    2-3. Edit the following file and save the change made.

        C:\Program Files\Windows CE Tools\wce500\IT-600\Emulation\IT-600.cdes

Before you change, the default parameter in the file is described as follows.

```
module=DevEmu500.exe
```

Change the parameter to the one below. Be sure to describe the whole parameter in single one line.

```
module=C:\Program Files\Microsoft Device Emulator\1.0\
DeviceEmulator.exe
```

You can substitute Device Emulator Version 3.0 released in Visual Studio 2008 for an engine of Device Emulator included in a IT-600 SDK by the above-mentioned work.

Case of using after Windows Vista OS

If you use OS after Windows Vista (Windows 7 or Windows Server 2008), please set device emulation and I/O simulator as administrator.
Please check "Run this program as an administrator" of property from opening Explorer.
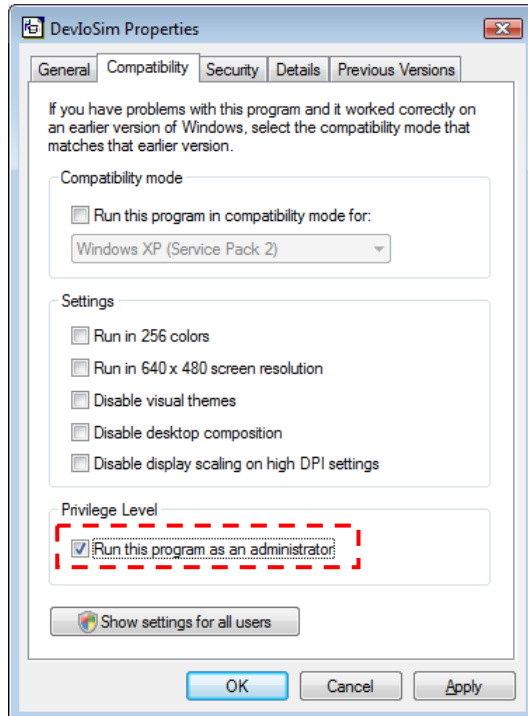(Ex. Execute I/O simulator in Windows Vista as administrator.)

Figure 7.1

These program have installed the following location as default setting.

- Device emulator
  C:\Program Files\Microsoft Device Emulator\1.0\DeviceEmulator.exe
- I/O simulator
  C:\Program Files\Common Files\CASIO\Emulator\DevIoSim.exe

7.2 Starting Up the Device Emulator

After installing all required software described in Chapter 7.1, follow the steps below to start up the **Device Emulator** on your PC.

1. Navigate to Start menu → **All Programs** → **CASIO Device Emulator** and click **IT-600**.
2. Make sure that the IT-600 **Device Emulator** has started up on the screen. See Figure 7.2. If Figure 7.2 and Figure 7.3 appear on your PC, it is ready to use the emulator.

Note.
 If do not appear "**IT-600**" in "**CASIO Device Emulator**", please execute "**Add Device**".
 If you use OS after Windows Vista, please execute "DevEmuLoader.exe" as administrator by referring "Case of using after Windows Vista OS" section.

C:\Program Files\Common Files\CASIO\Emulator\DevEmuLoader.exe

Figure 7.2   IT-600 Device Emulator   Figure 7.3   I/O Simulator
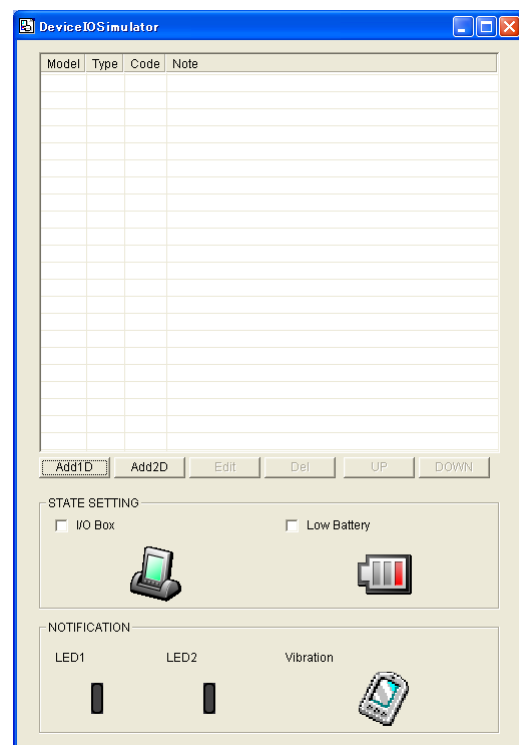
Terminology of **Emulator** and **Simulator**;
The **Emulator** described in this reference manual is a software that can provide performances immense in similarity to those performed on the actual device by imitating individual hardware components or protocol which can control the components by side.
On the other hand, the **Simulator** is also software but logically integrates application programming interfaces ("API") and minimum functions to debug the application program. From the view of application side, the **Emulator** performs in the pseudo CPU and hardware environment – impossible for the application to recognize whether it is in actual environment or pseudo environment. However, performances carried out by the **Simulator** are not likely to those performed by actual components.

7.3 Using the Device Emulator

7.3.1 IT-600 Device Emulator

The **IT-600 Device Emulator** emulates various operations carried out by the actual IT-600 device on PC's screen such as mouse pointer by mouse, input on PC's keyboard, displaying execution of operation, and operations by actual devices. Figure 7.4 shows an emulated IT-600 device on the screen of PC.

Figure 7.4

Key Input

The emulator offers the key input capability similar to the ability that actual IT-600 device can perform. For instance, a key on the emulated keyboard of IT-600 on the screen (see Figure 7.4) can be clicked with mouse of the PC as well as key input made directly on the PC's keyboard for input.

Reading Bar Code

The emulator enables bar codes pre-registered in the I/O Simulator (see Figure 7.3) to be input when clicking Trigger key on the emulated keyboard (see Figure 7.4). Note however that clicking the Trigger key continuously for a period of one second or longer is required. Otherwise, an incorrect key input may result.

Sound

The emulator offers the beep and sound capability similar to the capability that actual IT-600 device can output via its integrated speaker.

7.3.2 I/O Simulator

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

Registration of bar code symbologies

1. Registration
    Click **ADD1D** or **ADD2D** button (drawn by red line in Figure 7.4) to change the screen into the bar code registration mode.
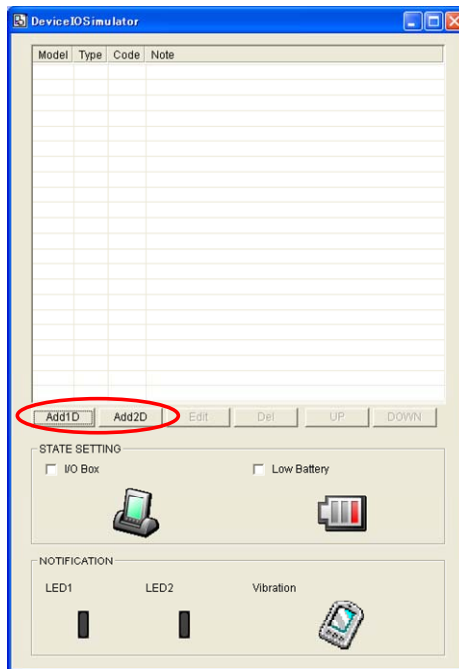

Figure 7.5

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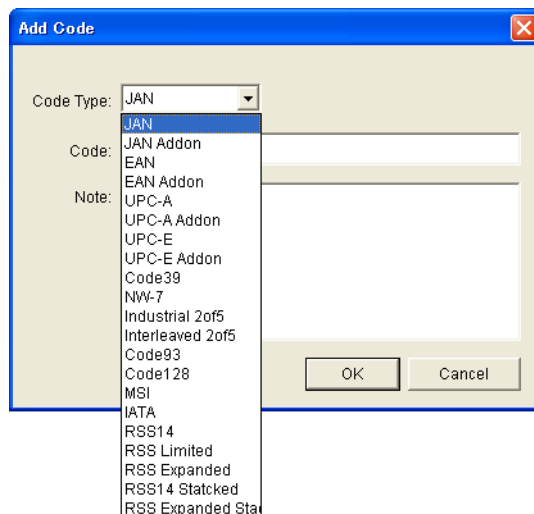   Choose a bar code symbology in the **Code Type** pull-down menu that you wish to register in the **I/O Simulator**.

Figure 7.6

3. Registration of bar code and note

Enter a bar code data in the **Code** field (see Figure 7.7) that you wish to register and a note about the bar code in the **Note** field if necessary. Click **OK** button to complete the bar code registration.

Figure 7.7

4. Completion of registration

After completion of the bar codes registration, the screen in Figure 7.8 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 use in debugging.

Figure 7.8

5. Editing registered bar code content
    Highlight a bar code in the list of registered bar codes (see Figure 7.8) you wish to edit and click **Edit** button. Figure 7.8 appears for editing the bar code and its information.
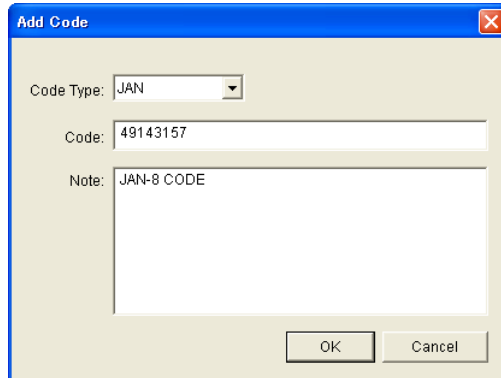
Figure 7.9

6. Deleting registered bar code content
    Highlight a bar code in the list of registered bar codes (see Figure 7.8) you wish to delete and click **Del** button. Dialogue screen appears to confirm with you. If it is okay to delete, click **Yes** button, otherwise click **No** button.
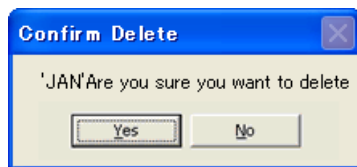
Figure 7.10

Detection of Terminal in Cradle and Low Battery Warning

If you check in the **I/O Box** and **Low Battery** boxes of STATE SETTING field (see Figure 7.11), the simulator simulates the respective performances.
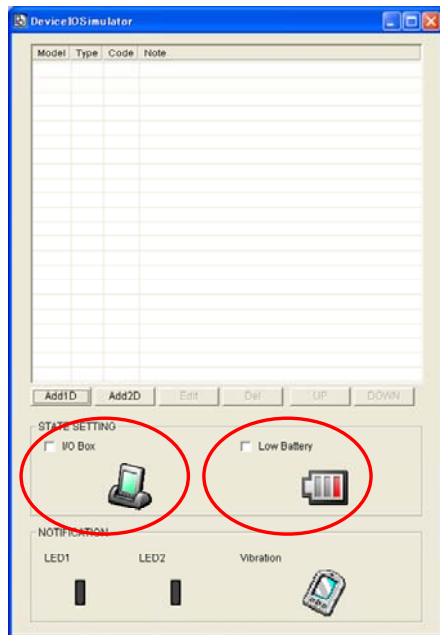

Figure 7.11

I/O Box

If this box is checked, notification is issued informing the connection between the IT-600 **Device Emulator** and cradle is being established. The notification can be utilized by the application.

Low Battery

If this box is checked, notification informing the generation of low battery warning is issued when the battery pack capacity becomes low. The icon in the toolbar in the emulated screen appears either. The notification can be utilized for the application to recognize that the generation of low battery warning has been issued.

Indications

The I/O Simulator expresses a change of state that occurred in the IT-600 **Device Emulator.**

- LED
  When the IT-600 **Device Emulator** turns on the LED, the LED icon (LED2) in the I/O Simulator also turns on. See Figure 7.11.

- Vibration
  When the IT-600 **Device Emulator** turns on the vibration, the Vibration icon in the I/O Simulator also turns on. See Figure 7.11.
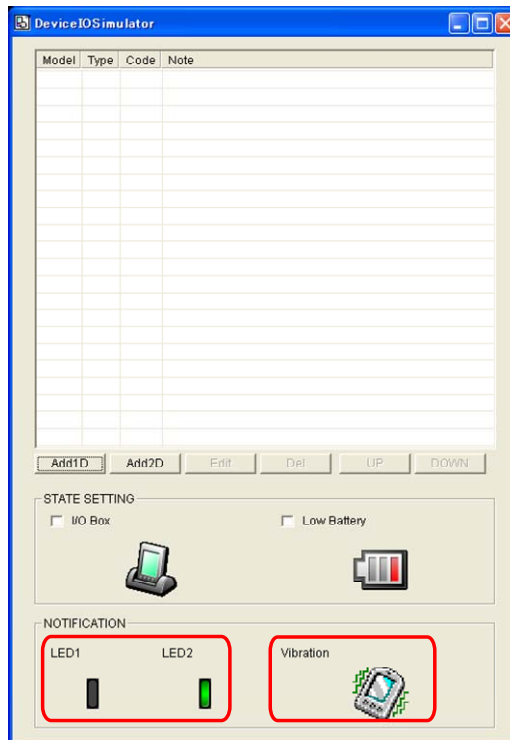

Figure 7.12

7.3.3 Connecting via ActiveSync

If debugging with the **Device Emulator** is carried out in either eMbedded Visual C++ 4.0 or Visual Studio 2008 or Visual Studio 2005, or transmission/reception of a file with the **Device Emulator** is carried out, **ActiveSync** must be used.

Setting ActiveSync

1. Start up **ActiveSync** and then navigate to **File → Connection Settings …**.
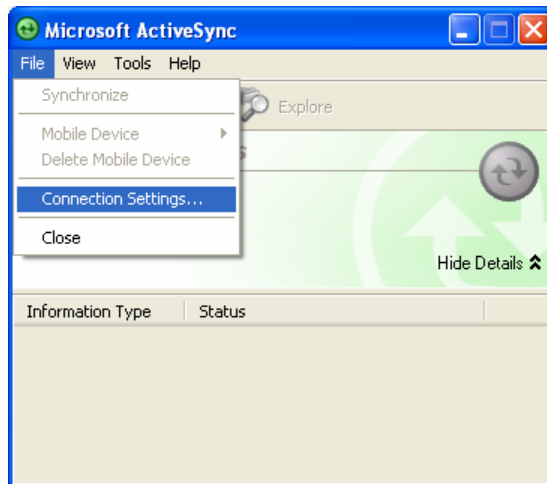

Figure 7.13

2. In **Connection Settings** screen, check in the **Allow connections to one of the following** box and choose **DMA** in the pull-down menu. See Figure 7.14.

Figure 7.14

Connection via ActiveSync

The ways to establish connection of the **Device Emulator** via **ActiveSync** are;

- Using Visual Studio 2008 or Visual Studio 2005
- Using Standalone Device Emulator 3.0 (if Visual Studio 2008 or Visual Studio 2005 is not available.)

1. Start up the **Device Emulator** by referring to Chapter 7.2 "Starting Up the Device Emulator".
2. Start up Visual Studio 2008 or Visual Studio 2005, and then navigate **Tools** → **Device Emulator Manager**.
3. If Visual Studio 2008 or Visual Studio 2005 is not available on hand, start up the Standalone Device Emulator 3.0.

   C:\Program Files\Microsoft Device Emulator\1.0\dvcemumanager.exe
4. Right-click **IT-600 Emulator** in **Available Emulators** list and then choose **Cradle** in the popup menu. See Figure 7.15.
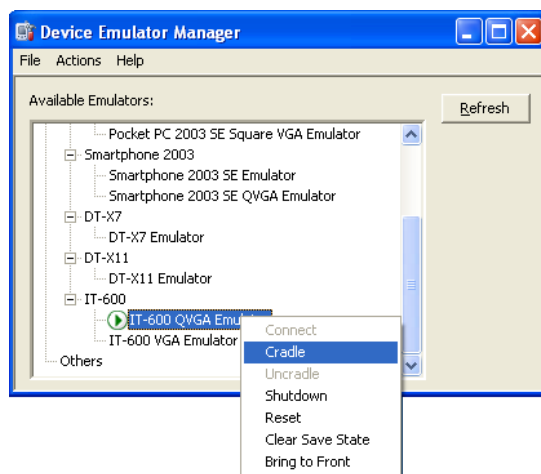

Figure 7.15

5. Make sure ActiveSync has started up and the ![icon] icon in the status bar appears. See the emulated screen of IT-600 in Figure 7.16. The icon indicates that the connection via ActiveSync has been established.
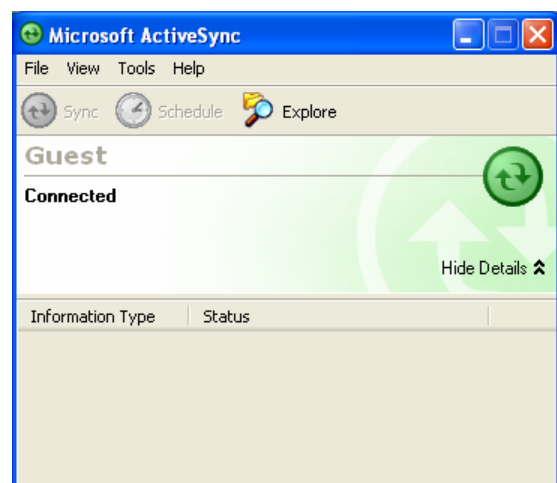

Figure 7.16

Figure 7.17

7.4 Debugging Application

This chapter describes how to debug your application using the **Device Emulator**. Before starting "Build", establish connection between the IT-600 and your PC via ActiveSync by referring to Chapter 7.3 "Using the Device Emulator".

For the order of developing application, refer to Chapters 8 "eMbedded Visual C++" and 9 "Visual Studio".

7.4.1   Setting Build Configuration

When using Visual Studio 2008 or Visual Studio 2005

Choose **Debug** in the Solution Configurations pull-down menu in Visual Studio 2008 or Visual Studio 2005 and **IT-600 Emulator** in the target device pull-down menu. See Figure 7.17.
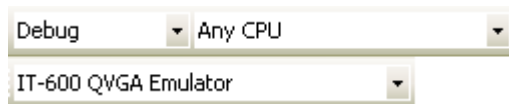

Figure 7.18

When using eMbedded Visual C++ 4.0

Choose **IT-600** in the Active WCE Configuration in pull-down menu in eMbedded Visual C++ 4.0, **Win32 (WCE ARMV4I) Debug** in the Active Configuration pull-down menu, and **IT-600 Device** in the Default Device pull-down menu.

Figure 7.19

7.4.2 Debugging Application

Basic Debug Operation

The debug operation used for the **Device Emulator** in both Visual Studio 2005 and eMbedded
Visual C++ 4.0 is the same with ordinary debug operation.

Debugging with the Device Emulator

With the **Device Emulator**, it is possible to set a brake point in source code of application program
for step-by-step debug method.

In case of using Visual Studio 2008 or Visual Studio 2005

Navigate to **Debug** → **Start Debugging** to start up debugging.

Figure 7.20

Similar to ordinary debugging operation with actual IT-600 device used, the **Device Emulator**
allows break point setting (drawn by red circle in Figure 7.21) in the source code and step-by-step
debug method.

Figure 7.21

In case of using eMbedded Visual C++ 4.0

1. Establish connection between the **Device Emulator** and PC via ActiveSync before starting debugging in eMbedded Visual C++ 4.0. For establishing connection via ActiveSync, refer to Chapter 7.3.3 "Connecting via ActiveSync".

2. Navigate to **Build** in the menu bar → **Start Debug** → **Go** to start up debugging.
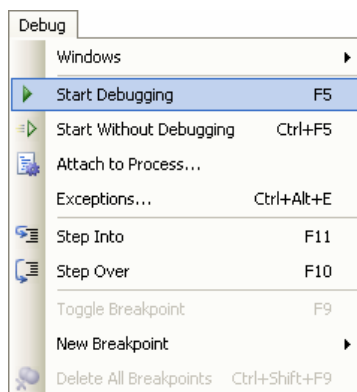

Figure 7.22

3. Similar to ordinary debugging operation with actual IT-600 device used, the **Device Emulator** allows break point setting (drawn by red circle in Figure 7.23) in the source code and step-by-step debug method.
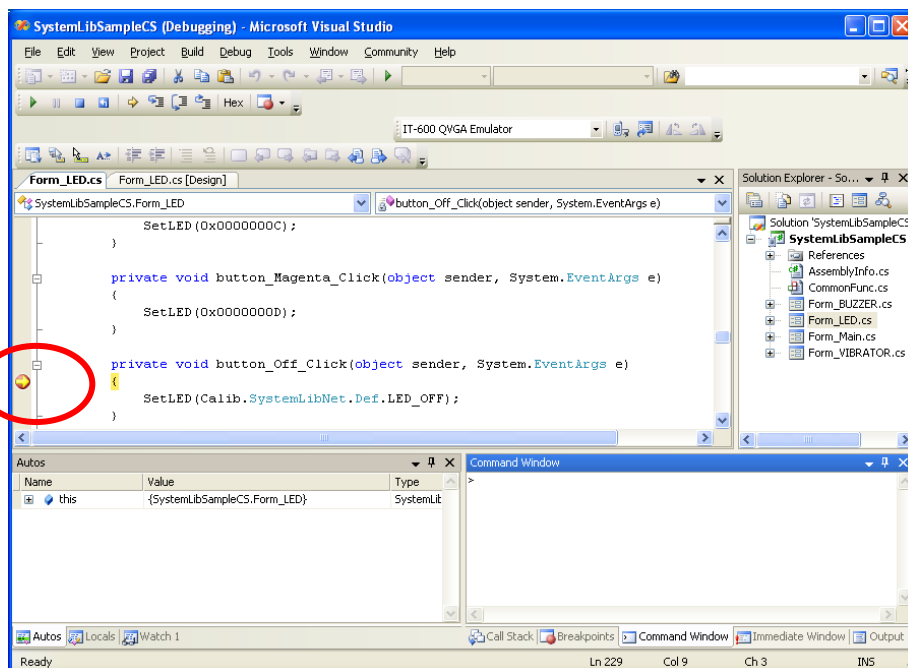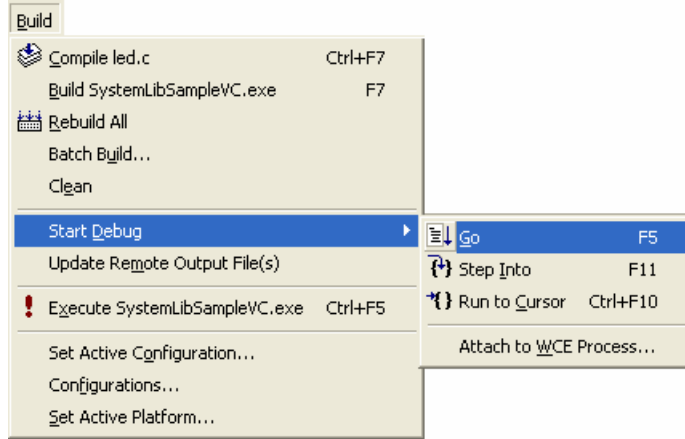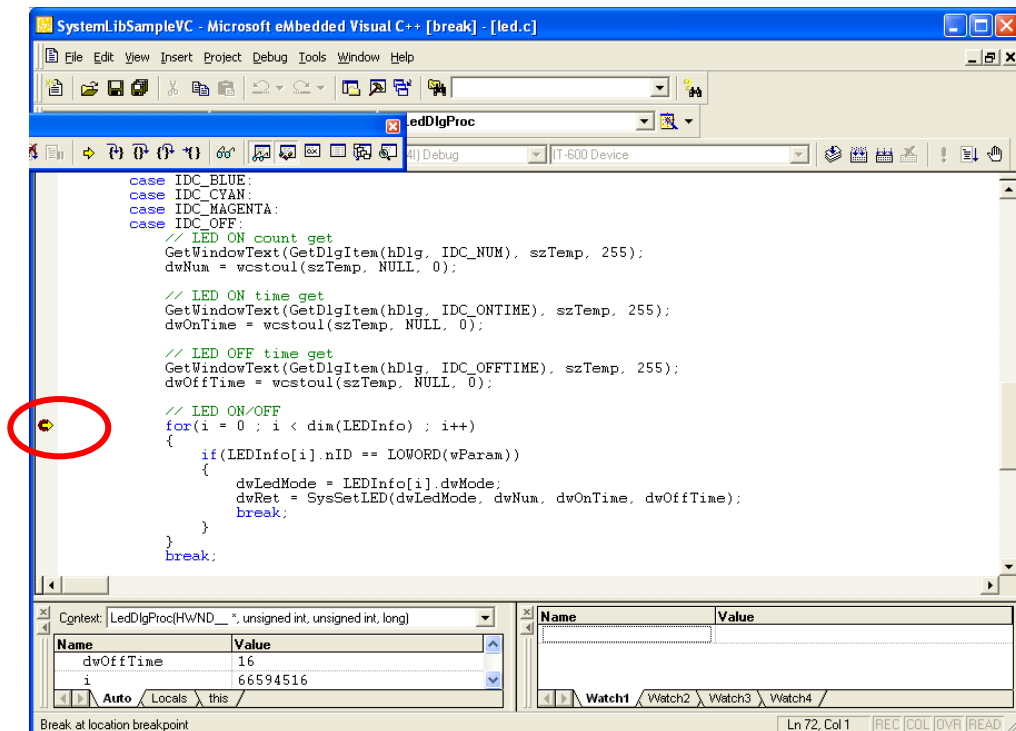

Figure 7.23

8. eMbedded Visual C++

8.1 Building Simple eVC++ 4.0 Test Program

1. On the PC, initiate eVC++ 4.0.
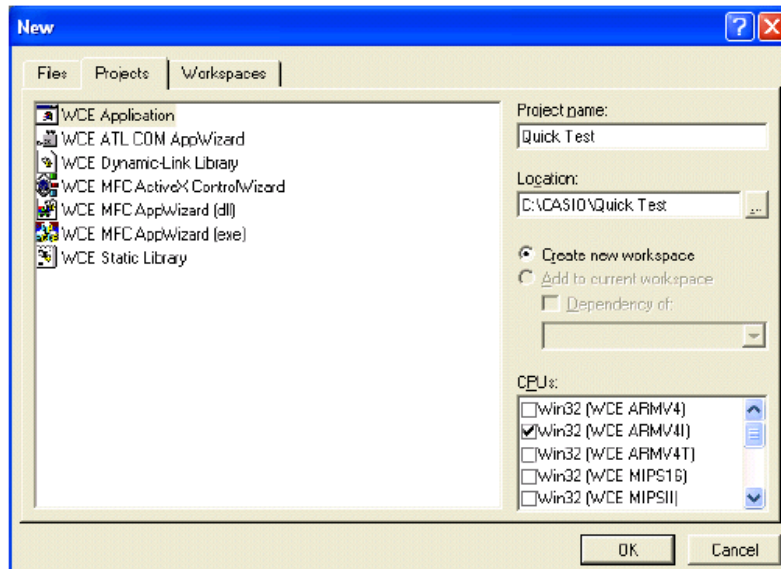2. Navigate to **File → New** in the **File** menu.

Figure 8.1

3. Highlight **WCE Application** in **Projects** tab. See Figure 8.1.
4. In **Location:** field, navigate to the folder where you want to create the new project.
5. In **Project name:** field, type in the name of the project.
6. In **CPUs:** pull-down menu, check **Win32 (WCE ARMV4I)**.
   Note:
   You can also check Win32(WCE emulator) and Win32 (WCE x86).

7. In the next dialog, leave **A typical "Hello World!" application** checked. Click **Finish** and then click **OK** button.
8. Below the Toolbar you will see a line of pull-down menu lists. Look for the one that indicates **STANDARDSDK** and choose **IT-600 SDK** in the list. The right most pull-down menu list will change to either **IT-600 Device** or **IT-600 Emulator**.
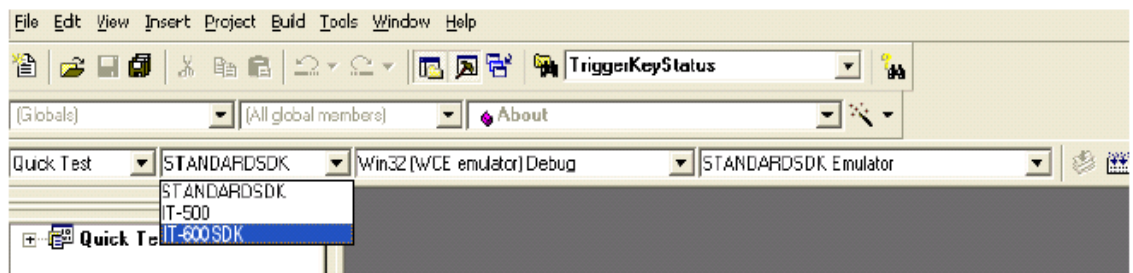
Figure 8.2

9. Initiate an ActiveSync connection using one of the methods described in this manual.
10. Choose **Rebuild All** from **Build** menu (or use the appropriate icon on the Toolbar).
11. The program will be built and automatically downloaded to the IT-600. By default, the program will be copied to the root folder on the terminal. Run the program to check that the process was successful.

You are now ready to begin development work with the IT-600. The full operation of eVC++ 4.0 and the use of features such as remote debugging are beyond the scope of this manual. See the Chapter 10 "Resources" for details on where to start if you are new to eMbedded C++ development.

8.2 Using CASIO Libraries from eVC++ 4.0

The **IT-600 SDK** provides the libraries for C++ applications. See Chapter 1.2 "Library Configuration" for the list of libraries provided.

Each library in the table (see Table 1.2) consists of a header file, a dll and a library file. The dlls are built into the ROM of the IT-600 and you do not need to download. The following is a simple example using one of the System Library functions in the simplest kind of WindowsCE program. The screen will flip 180° each time this program is carried out.

1. Make sure all the ".h" files for the CASIO libraries are installed in **\Program Files\Windows CE Tools\wce500\IT-600\include\ARMV4I**
   (This is the default installation location but yours will be different if you installed the SDK to other location).
2. Make sure all the ".lib" files for the CASIO libraries have been installed in **Program Files\Windows CE Tools\wce500\IT-600\lib\ARMV4I**.
3. In eVC++ 4.0, choose **New** from the **File** menu.
4. Highlight **WCE Application**. Choose a location and a name for the project and make sure the ARMV4I option is checked. Click **Next >** button.
5. On the next dialog click **A simple Windows CE application** option. Click **Finish** and then click **OK** button.
6. Make sure the IT-600 is the selected SDK and target device in the pull-down list boxes.
7. Click **ClassView** tab in **Solution Explorer** and expand **classes** fully until you can see **WinMain()** class. Double click it.
8. At the forefront of the source file, under **#include stdafx.h** code add the following code.

```
#include SystemLib.h
#include SystemLibdef.h
```

9. Move to the line // **TO DO: Place code here** and add the following code.

```
int  result;

result = SysGet180Rotate();
if( result == FALSE )
{
    SysSet180Rotate( TRUE );
}
else
{
    SysSet180Rotate( FALSE );
}
```

10. On the **Project** menu, navigate to **Add To Project → Files…**
11. Change **Files of type:** pull-down menu list to **Library files (.lib)**.
12. Navigate to the folder where the CASIO library files are stored (see step no. 2 in the previous page), highlight **SystemLib** file and click **OK** button.
13. Initiate **ActiveSync** to establish connection between the IT-600 and the PC.

14. Choose **Build All** from **Build** menu. The project will be built and copied to the IT-600.
15. Check the operation by running the program. You should find that each time the program is carried out, the screen flips 180°.

You should now be able to use the CASIO System library in your C++ applications. See the System Library Manual for full detail of all the functions.

You can also use the CASIO samples as described in Chapter 1.4.

9. Visual Studio

This chapter explains the development procedure of the application that uses the following development platforms.
- Visual Studio 2008
- Visual Studio 2005
- Visual Studio .Net 2003

- VCC++ application development for the IT-600 using Visual Studio 2005 is not supported. Always use eMbedded Visual C++ for VCC++ application development.
- The functions of the Common Device Control Library which control various individual devices integrated in the IT-600 have different name spaces and names from those available for the previous CASIO handheld terminals. They are not compatible with the ones in the previous CASIO library.
- VB .NET application or C# application developed with Visual Studio .NET 2003, but not with the CASIO dedicated libraries will run on the IT-600.
- Application developed with any functions of CASIO dedicated library must be rewritten by replacing the dedicated functions with the appropriate functions from the Common Device Control Library.
- New application for the IT-600 can be developed using either VB .NET or C# in Visual Studio .NET 2003 or Visual Studio 2005.
- It is recommended that Visual Studio .NET 2003 is used to modify applications developed for other handheld terminals for the IT-600.
- However, if Visual Studio 2005 is used to make modification, the solution/project of Visual Studio .NET 2003 is automatically changed by Visual Studio 2005. This may result in different configuration of the output folder according to the parameter settings for the project file. Process your application development with care focusing to this change.

9.1   Using CASIO .NET Libraries from VB .NET

The **IT-600 SDK** provides the libraries for VB applications. See Chapter 1.2 "Library Configuration" for the list of libraries provided.

This chapter explains how to create and start up a simple test program using one of the System functions. The test program flashes the LED in red for 5 seconds.

1. Create a new VB .NET Smart Device Application in Visual Studio .NET.
2. Click **Add Reference…** from Project menu.
3. Click **Browse** and navigate to the folder where you have stored the CASIO .NET library files. Highlight **SystemLibNet.dll** and click **Open**. Click **OK** button.
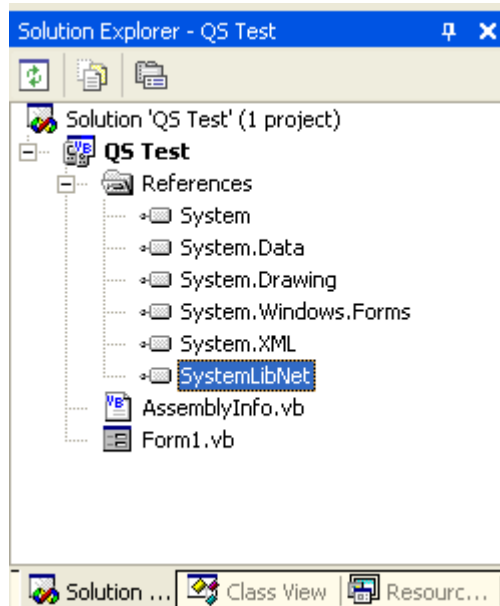

Figure 9.1

4. Add a button to the form, and double click it.

5. In the event function for the button 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 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.

6. Initiate **ActiveSync** to establish connection between the IT-600 and PC.
7. Choose **Deploy <name of project>** on **Build** menu.
8. The project will be built and copied to the IT-600. By default, it will be copied to **\Program Files\<name of project>** folder. **SystemLibNet.dll** will be deployed to the same folder.
9. Check that the program works correctly on the IT-600.

You can also use the CASIO samples as described in Chapter 1.4.

9.2   Using CASIO .NET Libraries from C#

The IT-600 SDK provides the libraries for C# applications. See Chapter 1.2 "Library Configuration" for the list of libraries provided.

This chapter explains how to create and start up a simple test program using one of the System functions. The test program flashes the LED in red for 5 seconds.

1. Create a new C# Smart Device Application in Visual Studio .NET.
2. Click **Add Reference…** from Project menu.
3. Click **Browse** and navigate to the folder where you have stored the CASIO .NET library files. Highlight **SystemLibNet.dll** and click **Open**. Click **OK** button.
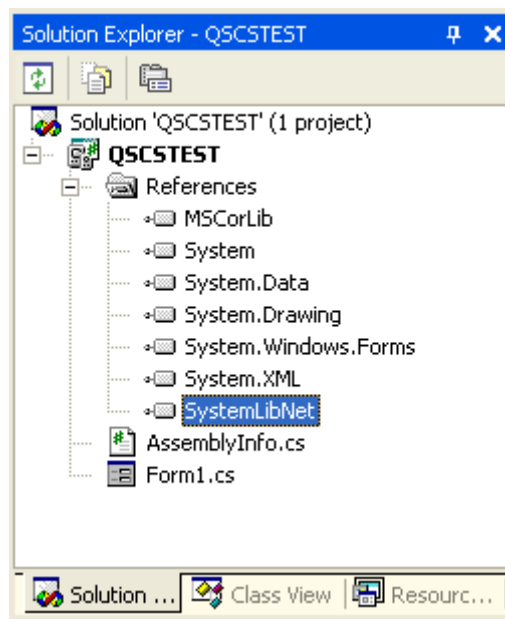

Figure 9.2

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

```
Using Calib;
```

5. Add a button to your form, double click it and 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 & 0x0000000F)
    {
        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;
        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.

6. Initiate **ActiveSync** to establish connection between the IT-600 and PC.
7. Choose **Deploy <name of project>** on **Build** menu.
8. The project will be built and copied to the IT-600. By default, it will be copied to \Program Files\<name of project> folder. **SystemLibNet.dll** will be deployed to the same folder.
9. Check that the program works correctly on the device.

You can also use the CASIO samples as described in Chapter 1.4.

9.3 Using CASIO Libraries from C++

This chapter explains how to create and start up a simple test program using one of the System functions. The test program flashes the LED in red for 5 seconds.

The intention of this chapter is just to check that the development environment is set up correctly. See Chapters 6.3 and 6.4 for information on how to set up a connection between the IT-600 and Visual Studio. You must install Visual Studio 2005 Service Pack 1 from Microsoft.

Before following the steps below, you will need to add the paths for the CASIO header and library files to Visual Studio 2008 or Visual Studio 2005. Choose **Tools-Options-Projects and Solutions-VC++ Directories**. Change the "Platform" to "IT-600" and add the path to the CASIO header and library files to the respective lists for "Include files" and "Library files".

1. First, create **Win32 Smart Device Project** with its device name **DeviceApp** for Visual C++ in Visual Studio 2008 or Visual   Studio 2005.
2. Choose default platform in the Selected SDKs field in the Platforms of Win32 Smart Device Project Wizard and click **<** button.
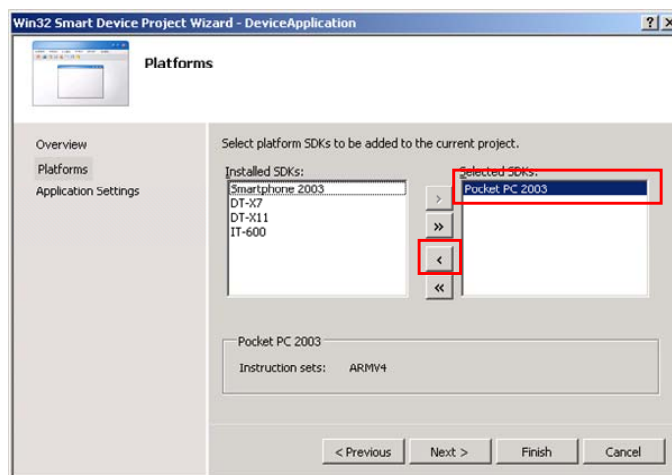

Figure 9.3

3. Choose **IT-600** in the Installed SDKs field and click **>** button.
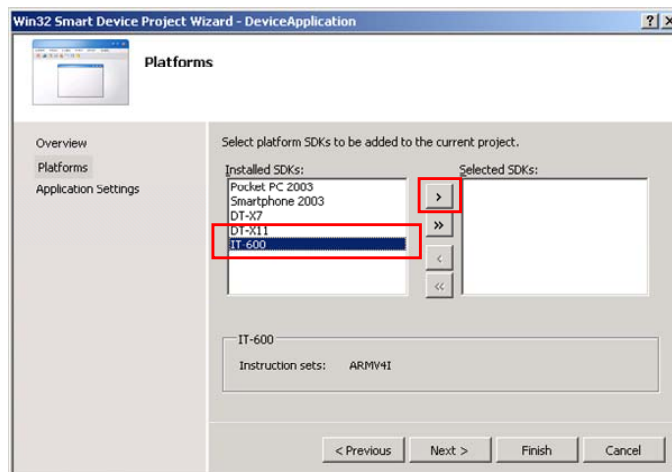

Figure 9.4

4. Click **Next >** button while **IT-600** is kept being highlighted in the Selected SDKs field.
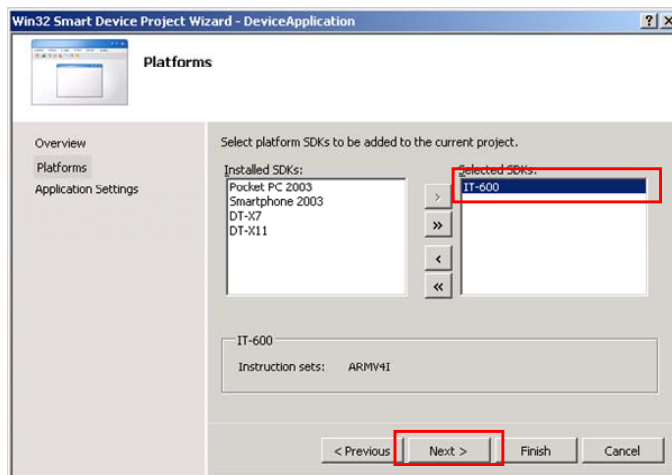

Figure 9.5

5. Choose **Console Application** for the Application type in the Application Settings menu, and click **Finish** button.
6. In Solution Explorer, click **DeviceApp.cpp** and then append the source code below subsequent to "#include <commctrl.h>".

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

7. 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 & 0x0000000F) {
        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;
        default:
            wcscpy_s( msg, _countof(msg), TEXT("LED_UNKNOWN") );
            break;
        }
        MessageBox(NULL, msg, TEXT("LED"), MB_OK);
    }
```

8. Choose **Properties** in the Project of Visual Studio 2008 or Visual Studio 2005, and navigate to **Configuration Properties** → **Linker** → **Input** → **Additional Dependencies** and then append **SystemLib.lib** (see red circle).
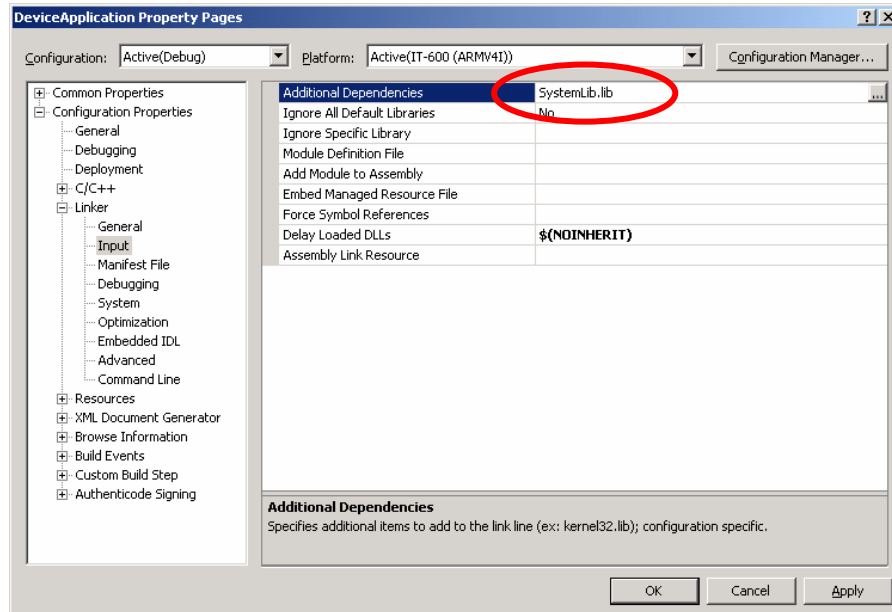

Figure 9.6

9. Choose **IT-600 Device** for the Target Device to establish connection with the PC.
10. Choose **Debug** in Visual Studio 2008 or Visual Studio 2005 and then click either **Start Debugging** or **Start Without Debugging**.
11. The project will be built and copied to the "\Program Files\<name of project>" folder (by default) in the IT-600.
12. Check that the program runs correctly on the IT-600.

You can also use the CASIO samples as described in Chapter 1.4.

10. Resources

Microsoft's own http://msdn.microsoft.com/mobility/ 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.

11. Troubleshooting

Connections from Visual Studio .NET 2003 to Pocket PC and WindowsCE .NET devices can be difficult to establish. This appears to be a Visual Studio issue and is not limited to only CASIO terminals. The good news is that once you have established an initial connection, you are unlikely to experience problems thereafter. Here are some things to try if you find that you have this problem:

- Start with an empty, out of the box device. If necessary, hard reset the IT-600 by holding down the Power key, the CLR key and poking the reset hole on the back of the terminal. Follow the on-screen instructions to complete the hard reset. If in doubt, see the User Guide. Please note that this will erase any data currently held in RAM on the terminal.
- In Visual Studio, select **Tools-Options-Device Tools-Devices**. Set the Platform to WindowsCE. Make sure that **Transport** is set to **TCP Connect Transport**. Note that once you have successfully connected you can use the **Save as option** to rename the connection type to IT-600 - This makes it clearer which device you are deploying to in future.
- Follow the instructions in the **Windows CE Utilities for Visual Studio 2003** readme file in order to identify the processor type of the connected device. For IT-600, select ARMV4I. The default location for the utilities is...\Program Files\Microsoft Visual Studio .NET 2003\CompactFrameworkSDK\WinCE Utilities.
- Establish the ActiveSync connection, and then initiate Visual Studio. Try to deploy a solution. If it fails, exit Visual Studio, re-start it and try to deploy again.
- Try running the ProxyPorts.reg file that comes with the **Windows CE Utilities for Visual Studio 2003** from Microsoft. See the readme file that comes with the utilities for details about this. After doing this, follow the steps above.
- Follow the other advice in the WinCE Utilities readme file.
- Run the Visual Studio .NET 2003 setup again. Uninstall Smart Device Programmability (by removing the check) and then re-install Smart Device Programmability.