BSQUARE® CORPORATION

The Cassiopeia BE-300
Development Environment Manual



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1 INTRODUCTION

This document describes the software and hardware requirements for the development of applications for the Cassiopeia BE-300 device.

This document also explains the process of building and debugging projects created using Microsoft's eMbedded Visual C++ Toolkit and the CASIO BE300 SDK. Please read this document thoroughly before beginning development.

Conventions Used

The following typographic conventions are used in this guide.

Table 1. Conventions Used

Style	Convention
Italic font	References to sections or titles of documents.
[CAPS_ITALIC_ BRACKETED]	Generic file names.(Example [CPU_NAME] or [USER_NAME]
`Courier New font`	Font used to signify code text.
Bold face font	Font used for function names, menu items, and a command or action taking place in procedures.
CAPS	Used to signify keys (Example: ENTER, ESC, CTRL-SHIFT)

Additional Documentation

Help documents for developing applications for the BE-300 can be found by clicking on the Help option in eMbedded Visual Tools 3.0. Specifications for the supported Standard Windows CE APIs as well as custom BE-300 APIs will be listed here. Additional information may be found in the following documents:

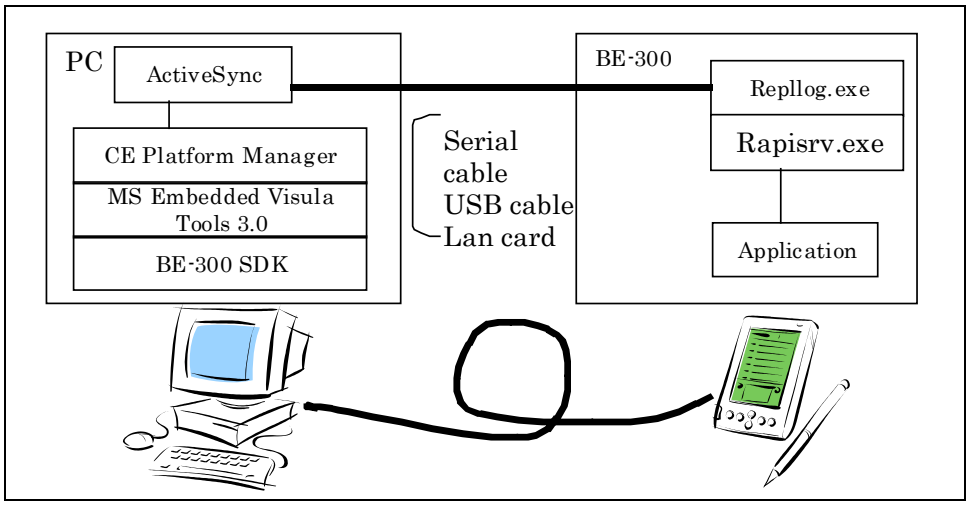
- *Applications Designs Guidelines for the Cassiopeia BE-300*
- *Developers Specification for Casio BE-300*
- *SDK Installation Guide*

2 OVERVIEW

Development Environment

Figure 1 depicts a typical development environment for building Windows CE Applications.

Figure 1. Development Environment



Hardware Requirements

To program for the Cassiopeia BE-300, you will need the device itself and a development PC. Requirements for the PC include:

- Pentium processor required; Pentium 150MHz or higher processor recommended
- RAM
  - 24 MB of RAM for Windows 98 Second Edition (48 MB recommended)
  - 32 MB for Windows NT Workstation 4.0 or Windows 2000 (48 MB recommended)
- Hard-Disk space:
  - Minimum installation: 360 MB
  - Complete installation: 720 MB
- CD-ROM drive compatible with multimedia PC specification

- VGA or higher-resolution monitor required; Super VGA recommended
- Microsoft Mouse or compatible pointing device
- Serial or USB or LAN cable

Software Requirements

Before developing applications for the BE-300, you must install the following applications on your development PC, in the order in which they are listed:

1. Microsoft® eMbedded Visual Tools 3.0
2. CASIO BE-300 SDK add-on to the Microsoft® eMbedded Visual Tools 3.0
3. Microsoft ActiveSync 3.1

These tools can be downloaded from the following Websites:

Table 2. Downloading Development Tools

Application name	Company	URL
BE-300 SDK	CASIO COMPUTER CO., LTD	http://cassiopeia.casio.co.jp/developers/en/*
Microsoft® eMbedded Visual Tools 3.0	Microsoft Corporation	http://www.microsoft.com/mobile/developer/default.asp*
Microsoft® ActiveSync 3.1	Microsoft Corporation	http://www.microsoft.com/mobile/pocketpc/downloads/activesync.asp *

NOTE: URL information may be changed without a preliminary announcement.

CASIO Tools

The BE-300 SDK also comes with extra tools that developers will find useful when developing their applications.

- ExeRepllog.exe: This is the tool which starts Repllog.exe. (See Connecting the Device to a PC)
- Mem.exe: Displays current memory usage on the device.
- SetCopy.exe: Used to create screen captures on the device. To use this tool, create a Program Files directory on a CF card and copy SetCopy.exe and dispcopy.xxx there. Insert the CF card into the device. Switch to the Card tab when it appears and then tap on **SetCopy** to start the initialization process. Initialization is complete when the square at the bottom left corner of the display is no longer red. This initialization process will register the screen capture functionality to the Tools hard icon on the device. Reset the device when initialization is complete. When you want to do a screen capture, tap on the Tools button. The last screen viewed before the Tools button was pressed will be saved as a .bmp file in the root directory of the device. The filenames are automatically named to avoid over writing existing files.
- gi.exe: Output debugging information such as active processes, modules and windows, available and total memory, etc.
- LanDebug: In order to perform ActiveSync by LAN, LanDebug folder is offered by SDK.

3 PROCEDURES

Configuring the Active Build

1. Start Microsoft® eMbedded Visual Tools 3.0
2. Create a project. From the IDE, click on **File|New**.
3. Choose the type of project that you would like to create from the **Projects** tab.
4. Enter the project name and modify the project location if desired.
5. Check the **Win32(WCE MIPS)** option in the CPUs list.
6. Click **OK** and continue to modify the settings for the project.
7. Set up the active platform. Select **Build|Set Active Platform**.
8. Choose the **CASIO_BE300** option from the list and press **OK**.

The IDE is now configured to build for the BE-300 device.

Connecting the Device to a PC

There are two methods used to connect the BE-300 device to a PC. The first method involves using CASIO's PC Connect software. PC Connect software allows the user to:

- **synchronize** PIM data (Calendar, Tasks, Contacts, Mail) between the device and the PC.
- **copy** files to and from the device
- **back-up** device data to the PC
- **restore** data to the device.

It is also possible to connect to the BE-300 using Microsoft® ActiveSync 3.1. Application developers must use this method to download/debug applications built for the BE-300. The following procedure describes how to create an ActiveSync connection to a PC. This procedure assumes that you have installed Microsoft® ActiveSync 3.1 on your PC.

1. Start ActiveSync and configure the connection settings by selecting **File|Connection Settings.**
2. Choose the desired cable connection (USB/Serial/LAN)
3. Connect your USB/Serial/LAN cable from your PC to the BE-300 device.
4. Create a Program Files directory on a CF Card, and copy ExeRepllog.exe to it.
5. Insert the card into the BE-300.
6. If you have PC Connect installed on your PC, tap on the **Connections** application from the **Main** menu.
7. Tap the **PC Connect** button. Ensure that the "Automatically connects with PC" option is unchecked.
8. Run ExeRepllog.exe from the **Card** tab.
9. When asked, "AutoCnct registry?", choose **Yes**.
10. When asked, on the PC, whether or not to Set Up a Partnership, choose **No**.

NOTE: The default communication speed is 115200bps.

Using the Remote Tools

1. Start Microsoft® eMbedded Visual Tools 3.0.
2. Select a remote tool such as Remote Process Viewer from the Tools menu.
3. When asked to "Select a Windows CE Device", expand the CASIO_BE300 node and select CASIO-BE300(Default Device) option. The remote tool should then be automatically connected to the device.

Steps 2 and 3 will work for any of the Remote Tools listed under the Tools menu. However, if you are not asked immediately to select a device when you start a remote tool, click on the **Connection|Add Connection** option to create the remote tool connection.

To get a better understanding of how to use the remote tools, please refer to the Remote Tools section under Microsoft Windows CE Help.

Appendix A

NOTES FOR PORTING APPLICATIONS

The list below contains some notes that developers should be aware of when porting applications that were intended to run on earlier versions of the Windows CE OS to the BE-300 device.

- Applications built for CE 2.10 are supported.
- PocketPC(CE 3.00) applications need to be modified because not all of the PocketPC APIs are supported. (i.e. aygshell.h, aygshell.lib are not included in this SDK)
- Applications built for CE 2.11 have not been checked on this platform.
- Applications built for CE 2.12 are not supported.