

# Sybase iAnywhere Blue SDK for Windows CE

## Bluetooth® Protocol Stack and APIs for Windows CE

### BLUE SDK FOR WINDOWS CE:

- Bluetooth protocol stack (version 2.1 + EDR of the Bluetooth specification)
  - Secure Simple Pairing
  - Extended Inquiry Response
  - Sniff-Subrating
  - Packet Flushing
  - Erroneous Data Reporting
  - Link Supervision Timeout
  - Encryption Pause / Resume
- APIs for Generic Access, Service Discovery Application, Serial Port, Dial-up Networking (support), Fax (support), Object Push, File Transfer, Handsfree, Headset, PBAP, PANU, HCRP, BNEP, Cordless telephony, OBEX, Intercom, A2DP (Advanced Audio Distribution) with the Sub-band Codec, AVRCP (AV Remote Control) and HID (Human Interface Device)
- Support for legacy applications through the standard Win32 COM Port API
- Sample Applications
- Bluetooth UART Serial radio driver
- Development test tools and documentation
- Co-existence with WiFi when using Bluetooth 2.1 + EDR radio hardware

The Sybase iAnywhere Blue SDK for Windows® CE is a software development kit that supports the incorporation of Bluetooth functionality into a Windows CE 5.0 environment. Derived from iAnywhere's proven embedded development kit, the Windows CE kit provides a pre-qualified Bluetooth protocol stack with sample applications and application programmer interfaces (APIs) for select Bluetooth profiles. The available SDK implements Bluetooth according to specification version 2.1 + EDR and targets version 5.0 of Microsoft's Windows CE.

Designed to give embedded Windows CE developers control of Bluetooth wireless technology, Blue SDK for Windows CE streamlines the development process and enables customers to rapidly develop customized Bluetooth communication applications for their mobile computing devices.

### BLUETOOTH PROTOCOL STACK FOR WINDOWS CE 5.0

The Blue SDK for Windows CE is a Special Interest Group (SIG) qualified Bluetooth protocol stack ported to the Windows CE 5.0 operating system. The protocol stack adheres to the Bluetooth specification v2.1 (Lisbon) + EDR and resides in kernel space for optimal data throughput and superior multi-profile performance. Applications and protocols are provided in source code, targeting both the telematics and personal navigation device markets, enabling device manufacturers to customize a Bluetooth solution for a specific processor and display size.

### SHORTEN DEVELOPMENT TIME

Developing a Bluetooth solution can be a complex, time consuming exercise given the expectations of the marketplace. Managed seamlessly from the users perspective, multiple applications running concurrently are now expected to communicate with a set of known remote devices. iAnywhere's Blue SDK for Windows CE addresses this requirement by simplifying the connection management operation through a set of high level APIs designed to reduce the complexity of discovery and connectivity.

Applications are quickly and easily developed using high level profile APIs that have been proven at interoperability testing events sponsored by the Bluetooth SIG, as well as through extensive internal testing. In order to meet your time to market requirements, our core protocol stack is a qualified Bluetooth component and is ready for quick market introduction.

### HIGH PERFORMANCE

The Bluetooth protocol stack resides in kernel space, making it an optimal choice for customer solutions that require the highest levels of performance. Multiple profile applications can be supported concurrently with this architecture. With protocol drivers resident in kernel space, the profile applications are assigned the highest priority for managing data flow. Profiles remain in user space providing designers with the ability to customize any Bluetooth solution easily and quickly. Proven and tested libraries supporting lower layer protocols such as Object Exchange reside in user space as well, permitting even greater flexibility for developers that want to incorporate more complex data transfers such as data synchronization. The iAnywhere SyncML Client SDK can manage these more complex data transfers.

**SUPPORTED OPERATING SYSTEMS:**

- Pocket PC 2003
- Pocket PC 2003
- Windows CE 5.0
- Windows Mobile 5 & 6

**PROCESSOR SUPPORT**

- The stack has been designed to provide support for a full range of microprocessors and user interface (UI) environments, giving customers the ultimate in flexibility and control. By delivering the stack in source code, programmers are able to compile it for any Windows CE 5.0 supported microprocessor.

**BLUETOOTH RADIO DRIVER**

- Version 3.x of Blue SDK for Windows CE includes code for a sample UART radio driver. This UART driver has the ability to handle CSR's BCSP transport protocol and it is provided in both source and binary code formats. Programmers can jump start the development of their own custom hardware driver.

**ENHANCED AUDIO FEATURES**

- The stack includes an audio waveform driver that supports a-law and μ-law compression, allowing the exchange of audio packets through the Bluetooth Host Controller Interface (HCI) in real-time.

**UP TO DATE PROTOCOLS AND PROFILES**

iAnywhere actively participates in the Bluetooth SIG, developing core specifications and influencing the direction of the Car Working Group, the Audio Visual Working Group and maintaining the OBEX specifications.

Our commitment in this area allows us to create and deliver to our customers the most up to date profiles and core protocol stack improvements in a timely manner. Participation at Interoperability events and Unplugfests allows the iAnywhere team to quickly develop and deploy a high quality deliverables to customers demanding only the best.

**CORE PROTOCOL IMPROVEMENTS**

Lisbon, the code name for Bluetooth specification v2.1 now includes significant improvements in security, permits faster connect times, and simplifies the end user experience. Features of Lisbon incorporated in the protocol stack include:

- Secure Simple Pairing
- Extended Inquiry Response
- Packet Flushing
- Sniff Sub-rating
- Erroneous Data Reporting
- Link Supervision Timeout
- Encryption Pause / Resume capabilities

With a Bluetooth specification v2.1 radio, developers can now take advantage of improvements introduced into the specification. The iAnywhere design team has added packet prioritization into this release as well, tagging data packets for quick delivery in applications that demand superior performance.

**SAMPLE APPLICATIONS**

Profiles supported by the SDK includes: Connection Manager (Generic Access Profile), Serial Port profile, File Transfer and Object Push profiles running over Object Exchange, HandsFree profile v1.5, HeadSet profile v 1.1, Personal Area Networking profile v 1.0, Telephony Control v1.1 (Intercom and cordless telephony profiles), Advanced Audio profile v1.2 (includes the Sub-band Codec), Audio Visual Remote Control profile v1.3 (v1.4 will be introduced once available), Phone Book Access profile v1.0, and Hard Copy Cable Replacement profile v1.0.

Additional profiles will be introduced to the SDK once ratified by the Bluetooth SIG; including the Human Interface Device profile v1.0 and Message Access profile v1.0.

Sample applications are included with the SDK, giving programmers a starting point for developing their own custom Bluetooth solutions. Sample code is also provided to illustrate to the designer how to create solutions requiring audio support.

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