



## CSR Synergy Bluetooth 18.2.0

### PBAPC Phone Book Access Profile Client

### Demo Description

November 2011



#### **Cambridge Silicon Radio Limited**

Churchill House  
Cambridge Business Park  
Cowley Road  
Cambridge CB4 0WZ  
United Kingdom

Registered in England and Wales 3665875

Tel: +44 (0)1223 692000

Fax: +44 (0)1223 692001

[www.csr.com](http://www.csr.com)



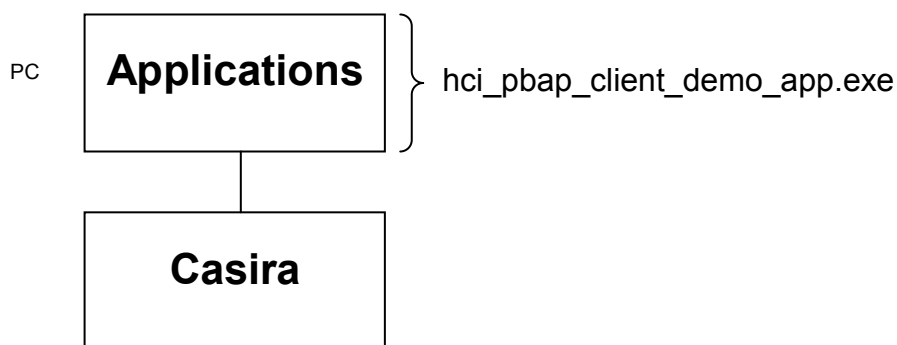
## Contents

<b>1</b>	<b>OBEX Phone Book Access Profile (PBAP) Client.....</b>	<b>3</b>
1.1	Generally .....	3
1.2	Use of the hci_pbap_client_demo_app.exe program .....	3
	Applications .....	3
	Casira.....	3
<b>2</b>	<b>Linux .....</b>	<b>8</b>
	Terms and Definitions .....	9
	Document History.....	9
	TradeMarks, Patents and Licences .....	10
	Life Support Policy and Use in Safety-critical Compliance.....	10
	Performance and Conformance .....	10

# 1 OBEX Phone Book Access Profile (PBAP) Client

## 1.1 Generally

The OBEX PBAP client example application can be used for accessing a phone book. This demo is running with a CASIRA with HCI or RFCOMM-build firmware.



The PBAP client program provides the following example functionality:

- Discovery of remote devices
- Connection management
- Phone book download
- Phone book browsing

The application has been made to run on Windows and Linux and may be connected to the Casira using either a serial connection using BCSP (`rfc_pbap_client_demo_app.exe`), a serial connection using H4DS (`rfc_pbap_client_demo_app_h4ds.exe`) or an USB connection (`rfc_pbap_client_demo_app_usb.exe`), and their HCI equivalent.

## 1.2 Use of the `hci_pbap_client_demo_app.exe` program

**Note:** This description is for CSR Synergy Bluetooth HCI. The functionality of the application for the RFCOMM build is identical.

### Program invocation:

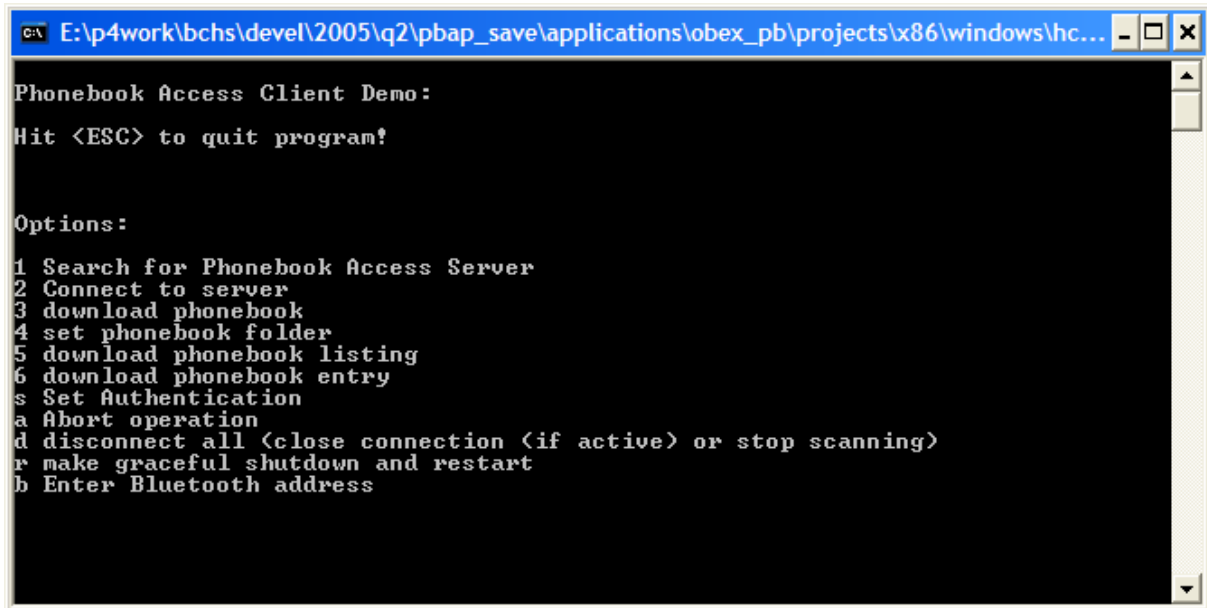
The following program parameters can be given as command line parameters at program start:

- |             |   |
|-------------|---|
| -C port     | to specify which COM port the program should use (connected to the Casira). For example, -C COM2, default is COM1.  |
| -B baudrate | to specify which baud rate to use between the PC and Casira. For example, -B 921600, default is 115200.   |
| -A BD addr. | to specify a device address for default, e.g. <code>hci_fts_client_demo_app.exe -a 0002:5b:01a494</code> . If no address is specified it is necessary to perform a search for servers in order to establish a connection. |

The local folder used for storing/retrieving files to/from by the demo application is the folder where the program starts.

## Program usage:

The demo application is implemented as a simple console application:



```

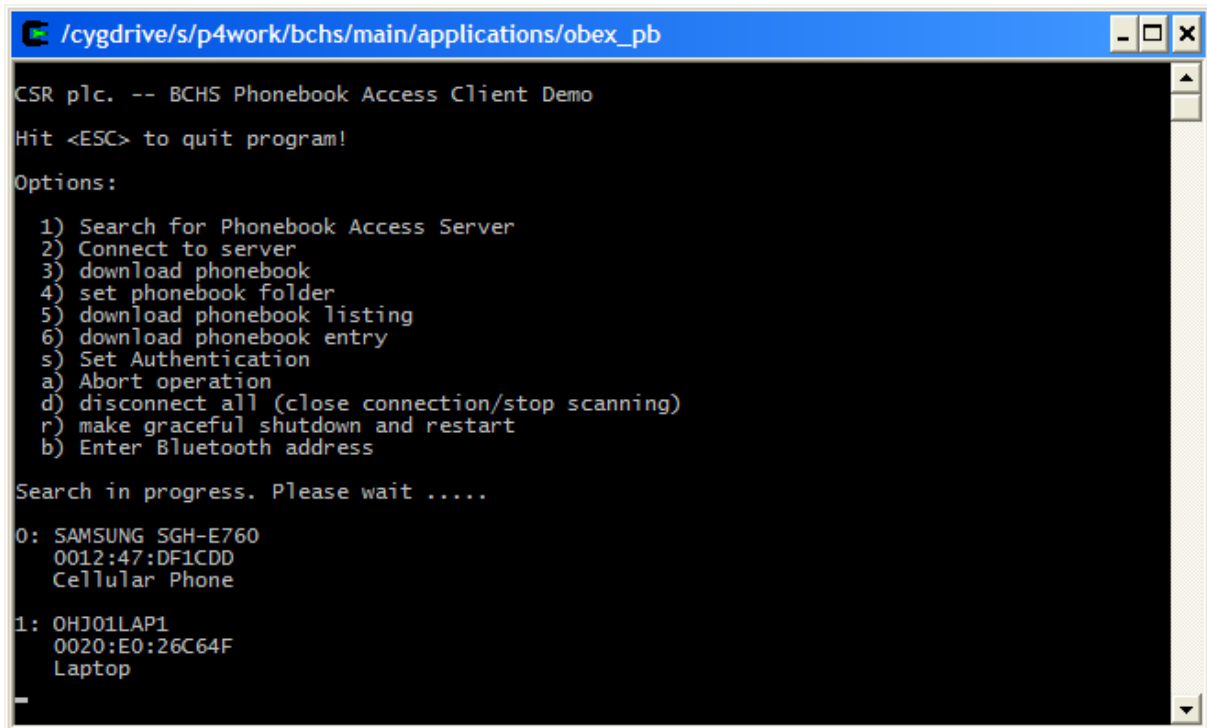
C:\ E:\p4work\bchs\devel\2005\q2\pbap_save\applications\obex_pb\projects\x86\windows\hc...
Phonebook Access Client Demo:
Hit <ESC> to quit program!

Options:
1 Search for Phonebook Access Server
2 Connect to server
3 download phonebook
4 set phonebook folder
5 download phonebook listing
6 download phonebook entry
s Set Authentication
a Abort operation
d disconnect all <close connection <if active> or stop scanning>
r make graceful shutdown and restart
b Enter Bluetooth address
  
```

The demo application can be closed (the program aborted) by pressing the ESC key at any time.

The shell commands are explained in detail in the following.

To search for remote devices, issue the "1" command:



```

/cygdrive/s/p4work/bchs/main/applications/obex_pb
CSR plc. -- BCHS Phonebook Access Client Demo
Hit <ESC> to quit program!

Options:
1) Search for Phonebook Access Server
2) Connect to server
3) download phonebook
4) set phonebook folder
5) download phonebook listing
6) download phonebook entry
s) Set Authentication
a) Abort operation
d) disconnect all (close connection/stop scanning)
r) make graceful shutdown and restart
b) Enter Bluetooth address

Search in progress. Please wait .....

0: SAMSUNG SGH-E760
   0012:47:DF1CDD
   Cellular Phone

1: OHJ01LAP1
   0020:E0:26C64F
   Laptop
  
```

The found devices will enumerate on the display when found as shown above. The first field in the enumeration is the remote device name, the second field contains the Bluetooth device address and the third field contains the class of device.

```

/cygdrive/s/p4work/bchs/main/applications/obex_pb
0012:47:DF1CDD
Cellular Phone

1: JV01LAP1
000F:B3:930562
Laptop

2: NM03LAP1
0007:61:469910
Laptop

3: KR05LAP1
0007:61:468BAC
Laptop

4: SAMSUNG SGH-E760
0012:47:DF1CDD
Cellular Phone

5: tt01:CasiraRight
0002:5B:01BF36
Cordless Phone

Closed Search
Selecting device with addr: 0002:5B:01BF36
Enter passkey for "0002:5B:01BF36": 1234

Connecting to Phonebook Access Server. Please wait ....
Connected to Server!

```

When the desired device appears, click the number appearing to the left of the entry (here 5). The search will close and the device address will be selected. To connect to the device, issue the command "2". This can be done without a previous search. If a previous search has taken place, the last found address of the search is the default address the "2" command tries to connect to.

The demo application always uses Bluetooth authentication and encryption. The demo application supports OBEX authentication which can be either:

- Mutual, with the first authentication requested by the server
- Mutual, with the first authentication requested by the client
- One way, with the client identifying the server

You can set the client to request the server to identify itself using the command "s". The demo application re-uses the Bluetooth passkey for authentication, but the PBAP profile is not limited to use the same Bluetooth passkey for OBEX authentication.

After the client has been authenticated, the connection has been established. The client is now in the root folder.

To download a phone book use command "3", enter the source (internal memory or SIM), and enter the name of the phone book. PBAP supports the phone books: pb.vcf (main phone book), ich.vcf (incoming calls history), och.vcf (outgoing calls history), mch.vcf (missed calls history) and cch.vcf (combined calls history). The phone book object will store in the demo application's root folder (the folder in which the application is executed).

```

/cygdrive/s/p4work/bchs/main/applications/obex_pb
5: tt01:CasiraRight
0002:5B:01BF36
Cordless Phone

Closed Search
Selecting device with addr: 0002:5B:01BF36
Enter passkey for "0002:5B:01BF36": 1234

Connecting to Phonebook Access Server. Please wait ....
Connected to Server!

Select source (1. Phone, 2. SIM [default:phone]):      1
Enter name of phonebook (default [pb.vcf]):
Enter max. number of entries you want (0 - only return PB size):      65535

Downloading phonebook. Please wait ...!
Error occurred. OBEX response code: 0x0044
##### default in keybPrim handler 63,

Select source (1. Phone, 2. SIM [default:phone]):      1
Enter name of phonebook (default [pb.vcf]):      pb.vcf
Enter max. number of entries you want (0 - only return PB size):      65535

Downloading phonebook. Please wait ...!
1419 Bytes downloaded, totale downloaded: 1419 Bytes
Phonebook download complete!
Size of Pb: 0
Number of missed calles: 0
Number of bytes downloaded: 1419

```

You can browse the server using the commands "4", "5" and "6".

To change the current folder use command "4" and enter the name of the folder. You can only change the current folder one level at a time. If changing the current folder from the root folder to the folder "\SIM1\telecom\pb", then the set folder command "4" must be called three times. To go back one level in the current folder use the set folder command "4" and enter "..". The current folder can always be set back to the root folder using command "4" and enter "\".

```

E:\p4work\bchs\devel\2005\q2\pbap_save\applications\obex_pb\projects\x86\windows\hc...
Connected to Server!
Select source <1. Phone, 2. SIM [default:phone]>:      1
Enter name of phonebook <default[pb.vcf]:      pb.vcf
Enter max. number of entries you want <0 - only return PB size>:      65535

Downloading phonebook. Please wait ...!
385 Bytes downloaded, totale downloaded: 385 Bytes
Phonebook download complete!
Totale length of object: 385
Size of Pb: 0
Number of missed calles: 0
Number of bytes downloaded: 385, procent downloaded: 100%
Enter new path [\root, [..]back:      telecom

Request path set to: .
Folder set succesfull!

Enter new path [\root, [..]back:      mch

Request path set to: .
Folder set succesfull!

```

The command "5" will pull a vCard listing of the current folder from the server. When prompting for the folder name, enter name of the folder you are listing of (it must be located in the current folder) or enter "." to get a folder listing of the current folder. When prompting for "order" enter the desired sorting order for the listing. The "order" can be "a" for alphabetic sorting, "i" for indexed sorting or "p" for phonetically sorting. The default sorting order is indexed, if anything else than a, i or p is entered the sorting order will be set to the default. When prompted for the search attributes you can enter n – for name, u – for number or s – for sound. The default search

attributes is name, if anything else than n, u or s is entered, search attributes will be set to the default. The search string makes it possible to limit the number of entries in the listing and the search will be performed on the attributes entered previously. If you want to get all entries in the listing enter "\*". The "maximum number of entries" is the maximum number of entries requested in the list. The offset is the offset to the first entry in the list. Notice that the demo application just saves the vCard-listing object in a file named after the folder. The demo application will add the extension ".vcf" to the file name. If "." is used as folder name the file will be named folder.vcf.

If the demo application is used together with the CSR PBAP demo server, then notice that the server ignores all parameters except folder name.

```

C:\ E:\p4work\bchs\devel\2005\q2\pbap_save\applications\obex_pb\projects\x86\windows\hc...
Totale length of object: 385
Size of Pb: 0
Number of missed calles: 0
Number of bytes downloaded: 385, procent downloaded: 100%
Enter new path [\root, [..]back:      telecom

Request path set to: .
Folder set succesfull!

Enter new path [\root, [..]back:      mch

Request path set to: .
Folder set succesfull!

Enter folder name: .
Enter order [a]llphabetic, [i]ndexed or [p]honetical: i
Enter search attributes <[n]ame, n[um]ber or [s]ound>: n
Enter Search string <enter [*] and [enter], if you want all entries>: *
Enter max. number of entries in listing: 65535
Enter start offset: 0
U-card listing downloaded complete
Phonebook size: 0
New missed calls: 0
Number of bytes downloaded: 14, procent downloaded: 100%

```

To get single entry from a phone book use the command "6". Note that it is only possible to get an entry from the current folder. You can use the command "4" to set the current folder.

```

C:\ E:\p4work\bchs\devel\2005\q2\pbap_save\applications\obex_pb\projects\x86\windows\hc...
Request path set to: .
Folder set succesfull!

Enter new path [\root, [..]back:      mch

Request path set to: .
Folder set succesfull!

Enter folder name: .
Enter order [a]llphabetic, [i]ndexed or [p]honetical: i
Enter search attributes <[n]ame, n[um]ber or [s]ound>: n
Enter Search string <enter [*] and [enter], if you want all entries>: *
Enter max. number of entries in listing: 65535
Enter start offset: 0
U-card listing downloaded complete
Phonebook size: 0
New missed calls: 0
Number of bytes downloaded: 14, procent downloaded: 100%
Enter entry name: 1.vcf
Request entry: ...
371 Bytes downloaded, totale downloaded: 371 Bytes
U-Card Entry downloaded complete
Number of bytes downloaded: 371, procent downloaded: 100%

```



## 2 Linux

This section describes how to build and run the PAC demo application on Linux.

The PAC demo application (pure user space), located in `./applications/obex_pb`, may be compiled on Linux by means of:

```
> make clean all TARGET_ARCH=Linux-2.6-x86
```

This will output five files: `hci_pb_client_demo_app`, `hci_pb_client_demo_app_h4ds`, and `hci_pb_client_demo_app_usb`, for serial and USB communication using a HCI split and `rfc_pb_client_demo_app`, `rfc_pb_client_demo_app_h4ds`, and `rfc_pb_client_demo_app_usb`, for serial and USB communication using a RFC split.

The demo applications are used like described above for Windows.



## Terms and Definitions

BlueCore®	Group term for CSR's range of Bluetooth wireless technology chips
Bluetooth®	Set of technologies providing audio and data transfer over short-range radio connections
CSR	Cambridge Silicon Radio
UniFi™	Group term for CSR's range of chips designed to meet IEEE 802.11 standards

## Document History

Revision	Date	History
1	26 SEP 11	Ready for release 18.2.0

## TradeMarks, Patents and Licences

Unless otherwise stated, words and logos marked with <sup>™</sup> or <sup>®</sup> are trademarks registered or owned by CSR plc or its affiliates. Bluetooth<sup>®</sup> and the Bluetooth logos are trademarks owned by Bluetooth SIG, Inc. and licensed to CSR. Other products, services and names used in this document may have been trademarked by their respective owners.

The publication of this information does not imply that any licence is granted under any patent or other rights owned by CSR plc.

CSR reserves the right to make technical changes to its products as part of its development programme.

While every care has been taken to ensure the accuracy of the contents of this document, CSR cannot accept responsibility for any errors.

## Life Support Policy and Use in Safety-critical Compliance

CSR's products are not authorised for use in life-support or safety-critical applications. Use in such applications is done at the sole discretion of the customer. CSR will not warrant the use of its devices in such applications.

## Performance and Conformance

Refer to [www.csrsupport.com](http://www.csrsupport.com) for compliance and conformance to standards information.