TOSHIBA

Information sheet

Bluetooth wireless technology Interoperability

Bluetooth™ Cards from TOSHIBA are designed to be interoperable with any product with Bluetooth wireless technology that is based on Frequency Hopping Spread Spectrum (FHSS) radio technology, and is compliant to:

Bluetooth Specification Ver.1.1, as defined and approved by The Bluetooth Special Interest Group.

Logo certification with Bluetooth wireless technology as defined by The Bluetooth Special interest Group.

CAUTIONS: 1. Bluetooth wireless technology is a new innovative technology, and TOSHIBA has not confirmed compatibility of its Bluetooth™ products with all PCs and/or equipment using Bluetooth wireless technology other than TOSHIBA portable computers.

Always use Bluetooth™ cards from TOSHIBA in order to enable wireless networks over two or more (up to a total of seven) TOSHIBA portable computers using these cards. Please contact TOSHIBA PC product support on Web site

http://www.toshiba-europe.com/computers/tnt/bluetooth.htm in Europe or

http://www.pc.support.global.toshiba.com in the United States for more information.

2. When you use Bluetooth™ cards from TOSHIBA close to 2.4 GHz Wireless LAN devices, Bluetooth transmissions might slow down or cause errors. If you detect certain interference while you use Bluetooth™ cards from TOSHIBA, always change the frequency, move your PC to the area outside of the interference range of 2.4 GHz Wireless LAN devices (40 meters/43.74 yards or more) or stop transmitting from your PC. Please contact TOSHIBA PC product support on Web site

http://www.toshiba-europe.com/computers/tnt/bluetooth.htm in Europe or
http://www.pc.support.globaltoshiba.com in the United States for more information.

3. Bluetooth™ and WirelessLAN devices operate within the same radio
frequency range and may interfere with one another. If you use Bluetooth™ and
WirelessLAN devices simultaneously, you may occasionally experience a less
than optimal network performance or even lose your network connection.
If you should experience any such problem, immediately turn off either one of your
Bluetooth™ or WirelessLAN.
Please contact Toshiba PC product support on web site
http://www.toshiba-europe.com/computers/tnt/bluetooth.htm in Europe or
http://www.pc.support.global.toshiba.com in the United States for more information.

Bluetooth wireless technology and your Health

The products with Bluetooth wireless technology, like other radio devices, emit radio frequency electromagnetic energy. The level of energy emitted by devices with Bluetooth wireless technology however is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.

Because products with Bluetooth wireless technology operate within the guidelines found in radio frequency safety standards and recommendations, TOSHIBA believes Bluetooth wireless technology is safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels

and committees of scientists who continually review and interpret the extensive research literature.

In some situations or environments, the use of Bluetooth wireless technology may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

Using the equipment with Bluetooth wireless technology on board of airplanes, or

In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organization or environment (e.g. airports), you are encouraged to ask for authorization to use the device with Bluetooth wireless technology prior to turning on the equipment.

Regulatory statements

General

This product complies with any mandatory product specification in any country/ region where the product is sold. In addition, the product complies with the following.

European Union (EU) and EFTA

This equipment complies with the R&TTE directive 1999/5/EC and has been provided with the CE mark accordingly.

Canada Industry Canada(IC)

This device complies with RSS 210 of Industry Canada.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device.''

L ' utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire de brouillage et (2) l' utilisateur du dispositif doit étre prét à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

The term "IC" before the equipment certification number only signifies that the Industry Canada

chnical specifications were met.

IC : 248H-DPA350S

Caution: FCC Interference Statement

This device complies with part15 of the FCC rules. Operation is subject to the following two conditions:

This device ma y not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

Note that any changes or modifications to this equipment not expressly approved by the manufacturer may void the authorization to operate this equipment.

Caution: Exposure to Radio Frequency Radiation

The radiated output power of the Bluetooth™ Cards from TOSHIBA is far below the FCC radio frequency exposure limits. Nevertheless, the Bluetooth™ Cards from TOSHIBA shall be used in such a manner that the potential for human contact during normal operation is minimized. This device has been tested with Wireless LAN (FCC ID:CJ6PA3171WL) for co-location requirements. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

NOTE: Changes or modifications made to this equipment not expressly approved by TOSHIBA or parties authorized by TOSHIBA could void the user's authority to operate the equipment.

Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the distance between the equipment and the receiver.

Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

TOSHIBA is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this Bluetooth™ Cards from TOSHIBA, or the substitution or attachment of connecting cables and equipment other than specified by TOSHIBA .

The correction of interference caused by such unauthorized modification, substitution or attachment will be the res ponsibility of the user.

Taiwan

Article 14   Unless approved, for any model accredited low power radio frequency electric machinery, any company, trader or user shall not change the frequency, increase the power or change the features and functions of the original design.

Article 17   Any use of low power radio frequency electric machinery shall not affect the aviation safety and interfere with legal communications. In event that any interference is found, the use of such electric machinery shall be stopped immediately, and reusing of such products can be resumed until no interference occurs after improvement.

The legal communications mentioned in the above item refer to radio communications operated in accordance with telecommunication laws and regulations.

Low power radio frequency electric machinery shall resist against interference from legal communications or from industrial, scientific and medical radio emission electric machinery.

Using Bluetooth™ Card from TOSHIBA equipment in Japan

In Japan, the frequency bandwidth of 2,400~2,483.5MHz for second generation low-power data communication systems such as this equipment overlaps that of mobile object identification systems (premises radio station and specified low-power radio station).

1.Sticker

Please put the following sticker on PC incorporating this product.

> In the frequency bandwidth of this equipment, industrial device, scientific device, medical device like microwave oven, licensed premises radio station and non-licensed specified low-power radio station for mobile object identification system (RF-ID) that is used in product line of factories,(Other Radio Stations)are used.
>
> 1 Please make sure before using this equipment that no Other Radio Stations are used in the neighborhood.
>
> 2 In case that RF interference occurs to Other Radio Stations from this equipment, please change promptly the frequency for use, place to use, or stop emitting Radio.
>
> 3 Please contact TOSHIBA Direct PC if you have a problem, such as interference from this equipment to Other Radio Stations.

2.Indication

The indication shown below appears on this equipment.

(1)   (2) (3)

2. 4FH1

(4)
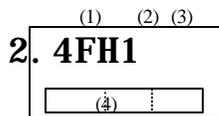
(1)   2.4 : This equipment uses a frequency of 2.4GHz.

(2)   FH : This equipment uses FH-SS modulation.

(3)   1: The interference range of this equipment is less than 10m.

(4)   This equipment uses a frequency bandwidth from 2,400MHz to 2,483.5MHz.
It is impossible to avoid the band of mobile object identification systems.

3. TOSHIBA Direct PC

Monday - Friday	: 10:00-17:00
Toll Free Tel	: 0120-13-1100
Direct Dial	: 03-3457-5916
FAX	: 03-5444-9450

Device Authorization

This device obtains the Technical Regulation Conformity Certification, and it belongs to the device class of radio equipment of low-power data communication system radio station stipulated in the Radio Law of Japan.

The Name of the radio equipment: EYXF2CS

TELECOM ENGINEERING CENTER

Approval Number : 01NYDA1305

The following restrictions apply:

Do not disassemble or modify the device.

Do not install the embedded wireless module into other device.

Trademark

Bluetooth is a trademark owned by its proprietor and used by TOSHIBA under license.

Connecting to the Internet

By using Bluetooth enabled modem, you can connect to the Internet wirelessly.
Perform the following steps.

Bluetooth enabled modem
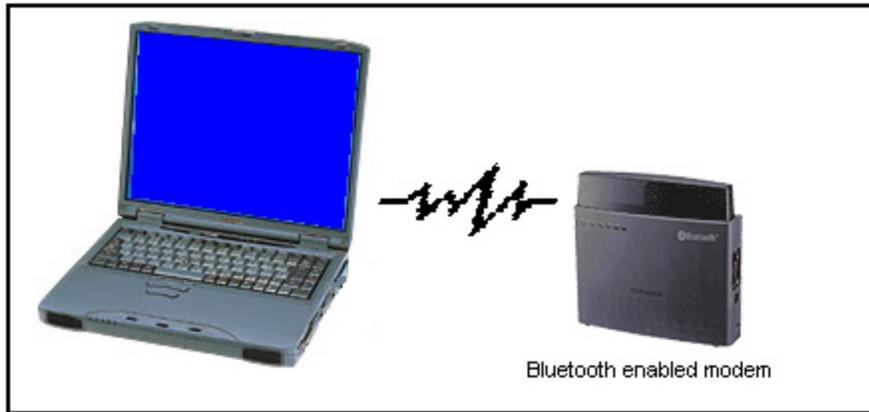
1. Start Bluetooth

Execute Device Discovery to detect the remote device. If you need, click here to refer to the
section of "Start Bluetooth".

Regarding the remote device to connect, the following information is required in advance.
- • Device Name: e.g. Toshiba Bluetooth Modem
- • Device Address: e.g. 00:50:11:22:33:44
- • Passkey (Password): in case of a passkey is set up by the modem side

2. Service Search for the remote device

After performed device discovery, discovered devices are listed in the device list view. Highlight
the discovered wireless modem to connect and click 🔁 [Refresh] icon. Service Search is
started. Service Search is investigating what service a remote machine owns.
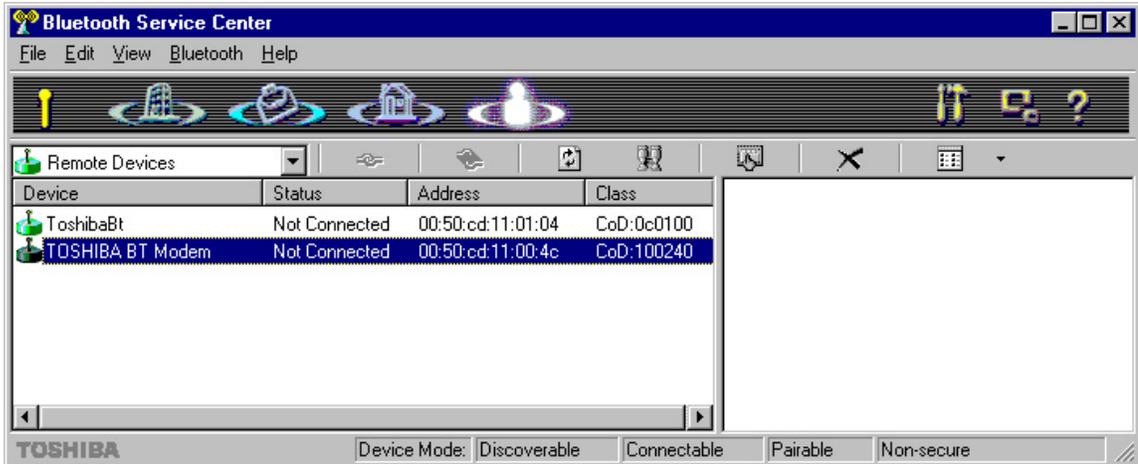
After performed Service Search, service that the wireless modem owns is displayed on the service list view. The following example shows the services, which the wireless modem has.
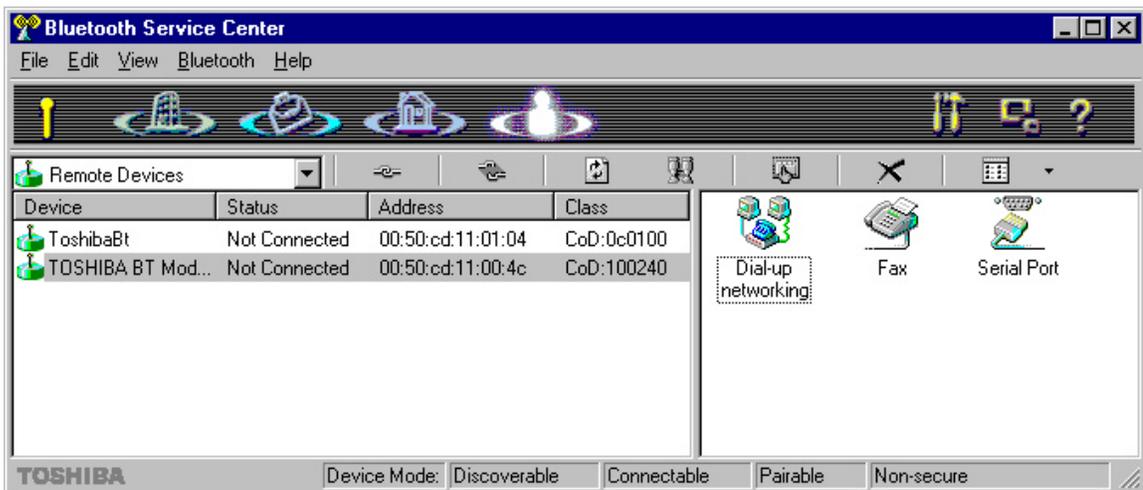
3. Connection with Bluetooth wireless modem

Tick "Dial-up networking" icon in the services list view and click [connect] icon.
The following figure shows the connection established between the PC and the modem.
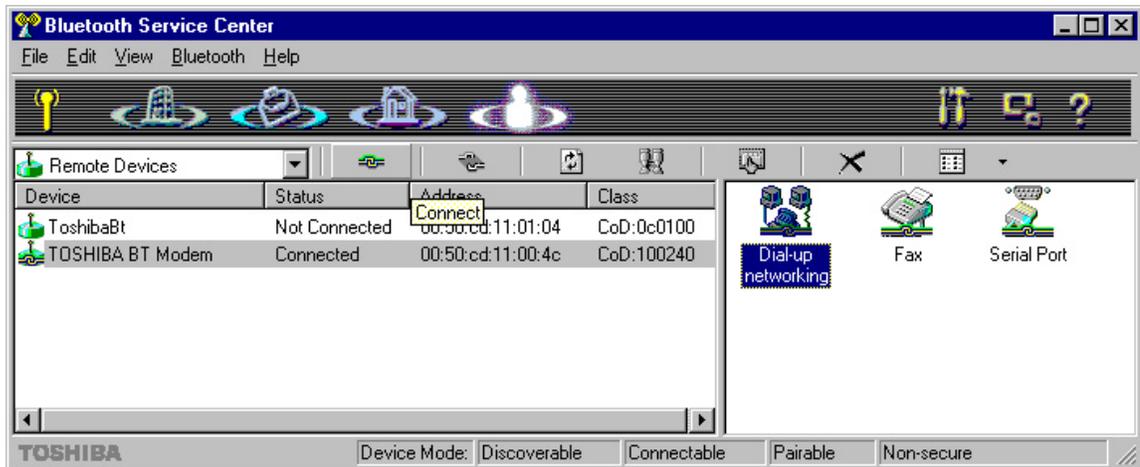
To check which virtual COM port your machine is using, select "Local Device" in the tool button bar. The following example shows that Local COM6 port is connecting with a wireless modem.
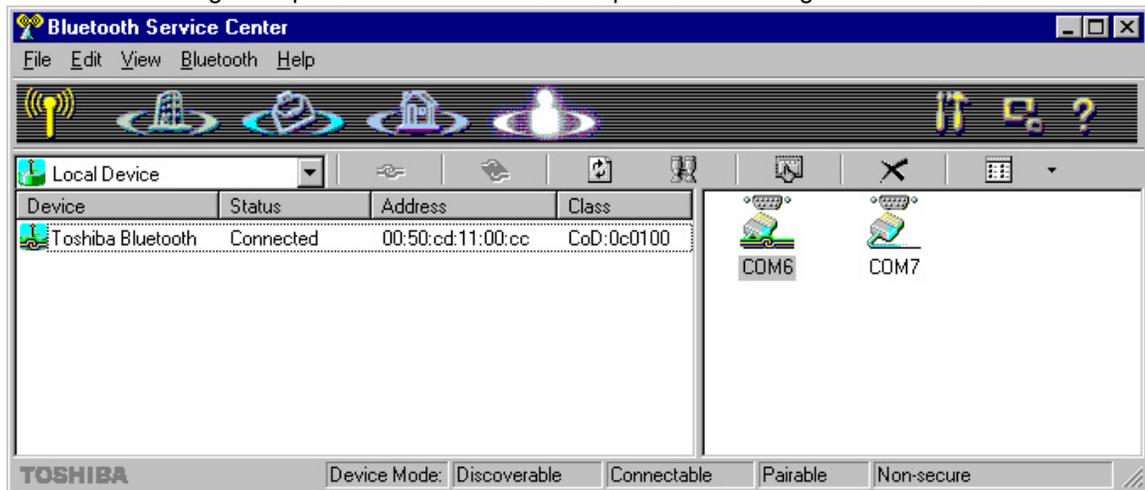
Note:

If the wireless modem that you intend to connect sets up a passkey (password), the dialog that asks a passkey (password) as shown in the following figure is displayed. In this case, please use the password beforehand set up by the modem side.
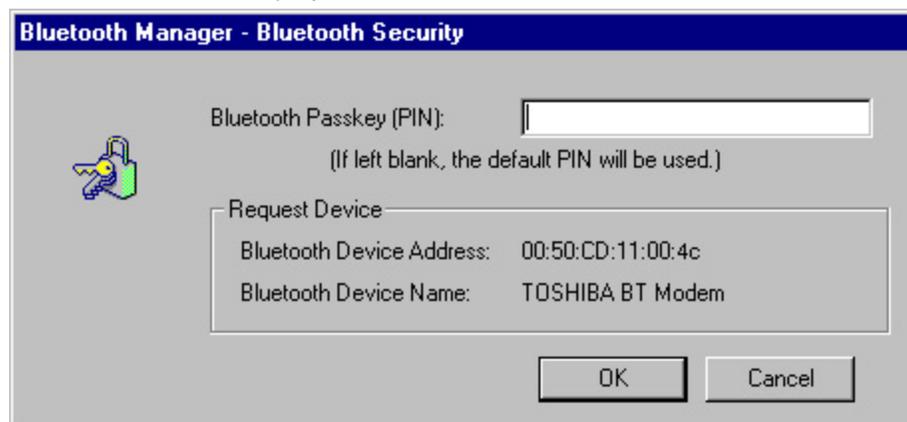
Only the first once, input the password.

4. Access to an Internet Service Provider

Finally, set up configurations for the wireless modem and a browser to access to an Internet Service Provider.

Note:

If a Bluetooth enabled modem's driver isn't installed in your PC, please install the drivers for wireless modem according to an attached procedure.

5. Disconnecting a Virtual COM Connection

To disconnect a link established to a remote device, tick "Dial-up networking" icon on the service list view and [Disconnect] icon on the tool bar.
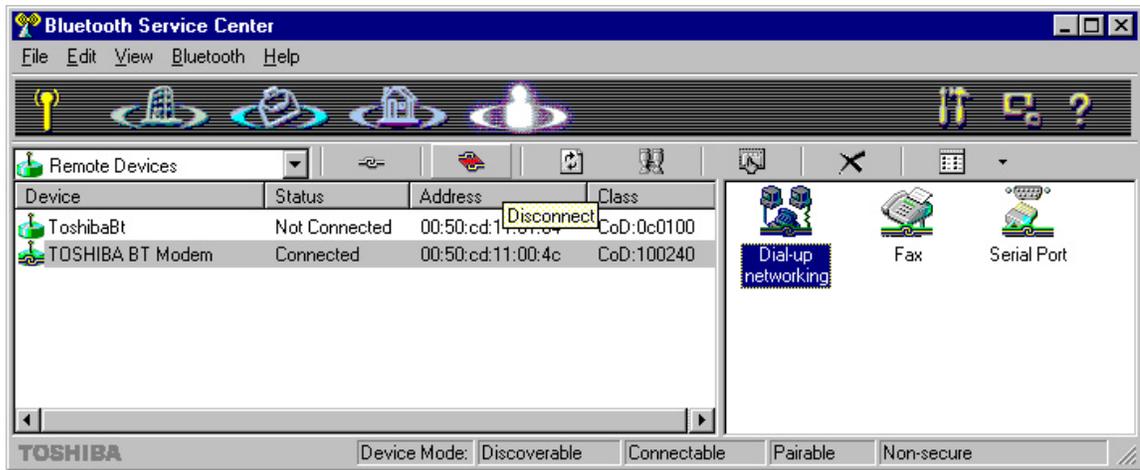
Communicating with other computers

You can communicate with the other Bluetooth enabled computers wirelessly by using Bluetooth Network Service.
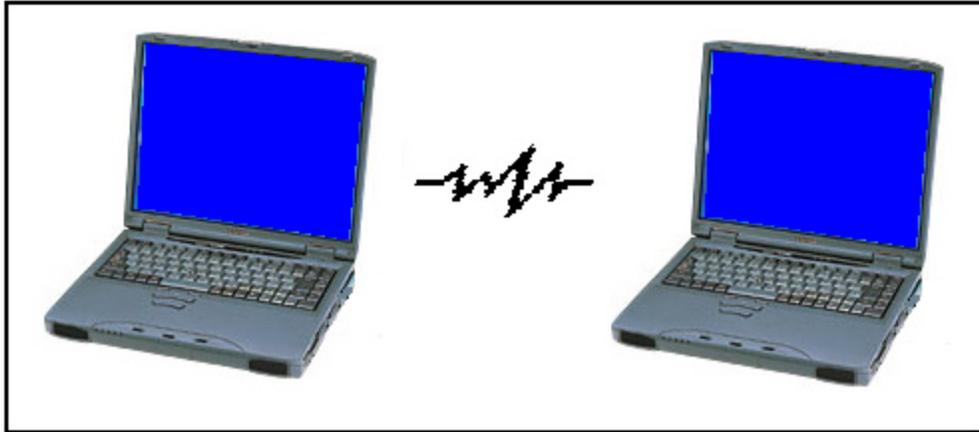
The example of using Bluetooth Network Service.
- **Sharing file/folder with the other machine.**
- **NetMeeting within a Bluetooth network service.**

At next, it explains Bluetooth Network Service.

Sharing file/folder with the other machine

Please perform the following setup by all the machines in a network group before starting Network Service.

1. Start Bluetooth Manager

2. Configure IP address

Go to [Control Panel]-[Network]. Open [Configuration] tab. Tick "TCP/IP->Toshiba Bluetooth LAN Emulation" and press [Properties] button.
Open [IP address] tab and click "Specify an IP address". Input the same IP address within a Network as the below figure. But assign a different address in the 4th column for each machine. Click [OK] to close the dialog.
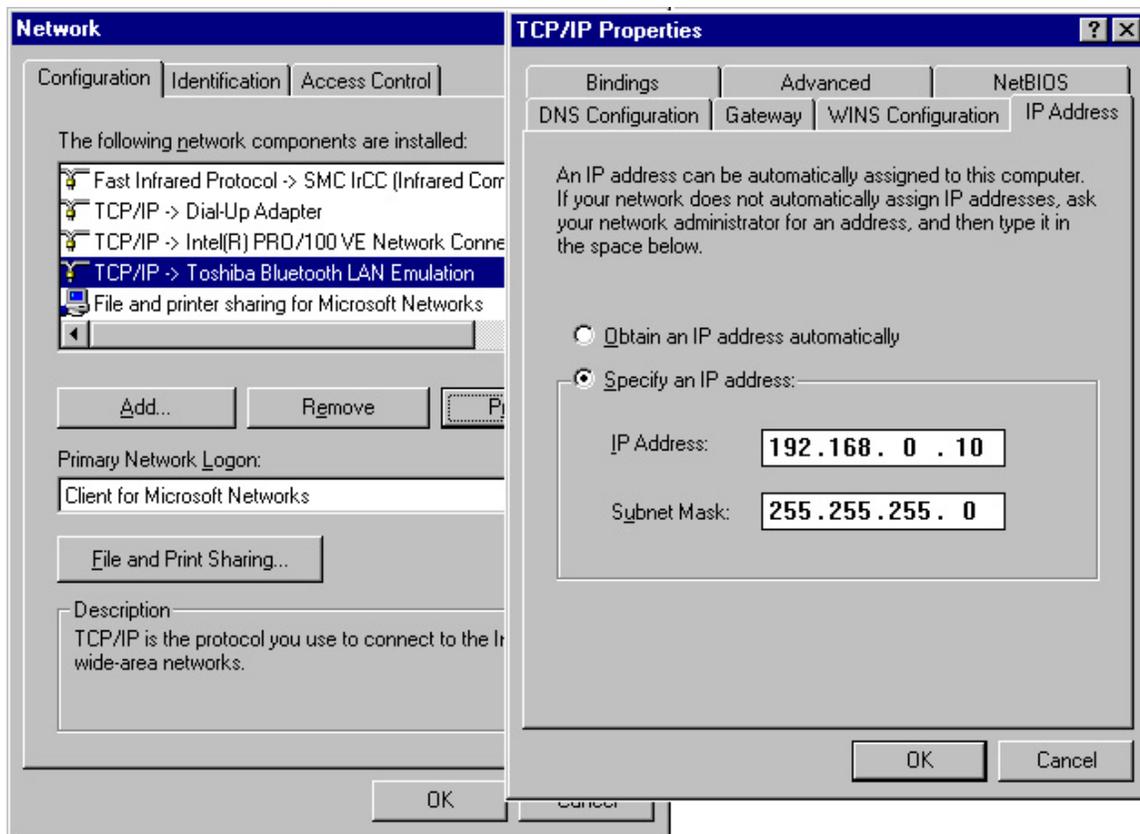
3. Input Identification

Open [Identification] tab. Input your computer and workgroup name, which identifies your computer to other people on the network. But use the same workgroup name within wireless network service. If necessary, input the "Computer Description".
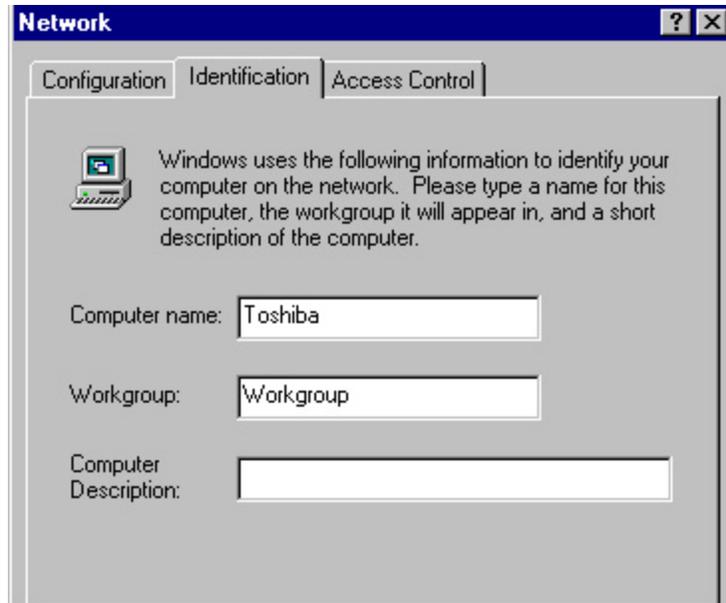
4. Start Bluetooth Network Service

The Server starts Network Server Service and the Client starts the connection with the Server.
Double-click [Network] icon on the Desktop and double-click [Entire Network] for exploring the
Network neighborhood.

NetMeeting within a Bluetooth Network Service

Using Bluetooth Network Service, it enables to perform Windows NetMeeting by wireless.

NetMeeting realizes the meeting on a network, and a share of application. For details information of NetMeeting, please refer to Windows Help.

Appendix

A. Security Mode

As for the setup of security, the template is beforehand set as the Office/Mobile/Home/Others button of Service Center as shown in the below figure. It is possible to change a security setup easily. However, this setup is very important, so please be careful of handling.
A default security mode is configured as "Others" with "Non-security".
If you need to change it, please refer to the "Bluetooth Utility User's Guide".

B. Add Local COM Port

At default setting, local COM Port already creates as like COM6. However, when a port is being used by other application, Local COM is not created.

If you need to create a new local COM Port, open [Start]-[Setting]-[Control Panel]-[LocalCOM] and add a new COM Client Port. For more details information, please refer to the "Bluetooth Utility User's Guide".
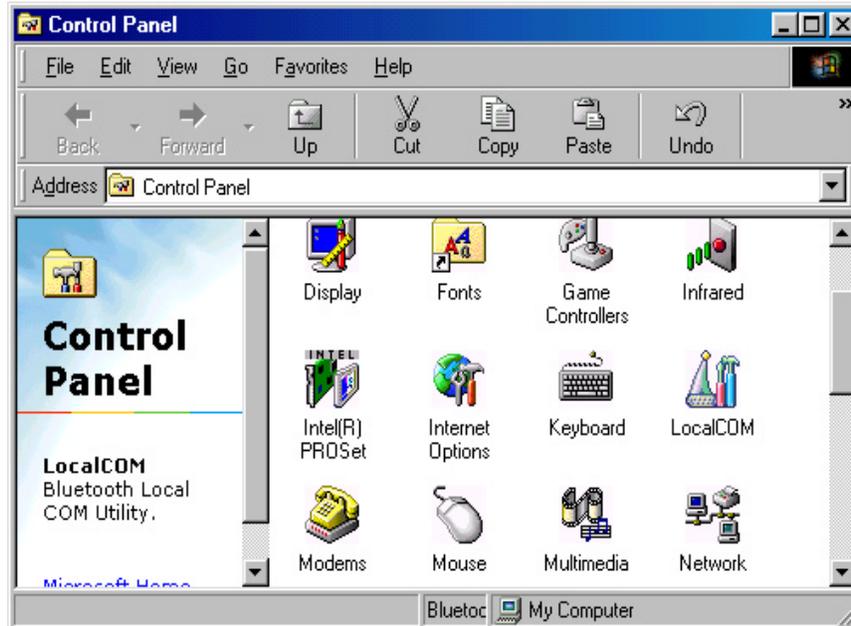
C. Bluetooth Network Service

By using Bluetooth network service, wireless network environment is realizable in a maximum of 8 sets of PCs. Bluetooth wireless network consists of Server and Client as like a general wired LAN.
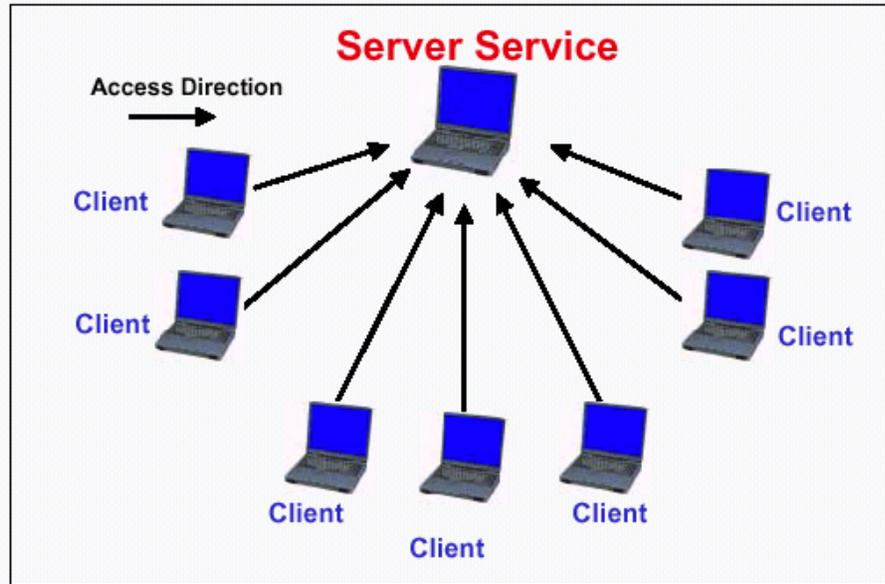
Image Figure of Bluetooth Network Service

About Quick Start Guide

This Quick Start Guide is the first step guide for basic Bluetooth Utility operation.
Also, it consists of the following items.

- [Start Bluetooth](#)
- [Connecting to the Internet](#)
- [Communicating with other computers](#)
- [Appendix](#)
- [Bluetooth Brand](#)

For more detailed information, please refer to the "Bluetooth Utility User's Guide".

Bluetooth Brand

As for the standard of Bluetooth^{TM}, research development and decision of a standard is performed by the Bluetooth^{TM} SIG (Special Interest Group).

Bluetooth^{TM} SIG is the joint achievements of nine leading companies, Toshiba , Ericsson, Nokia, Intel, IBM, 3Com, Lucent Technologies, Microsoft, Motorola. More than 1300 other manufacturers, from all parts of the world and various field of business, have now also joined the Bluetooth^{TM} family. Toshiba Personal Computer that integrates Bluetooth device passed Bluetooth^{TM} Qualification Program and it is accepted to use the Bluetooth trademark.

For more information on Bluetooth^{TM} SIG, please refer to the Bluetooth^{TM} Official site. (http://www.bluetooth.com/)

Bluetooth Technical Facts

A tiny Bluetooth^{TM} microchip, incorporating a radio transceiver, is built into digital devices. The Bluetooth^{TM} technology makes all connections instantly and without an inch of cable. It facilitates fast and secure transmissions of both voice and data, even when the devices are not within line-of-sight. The radio operates in a globally available frequency band, ensuring compatibility worldwide.

Also, the radio operates in the 2.45GHz band, which is license-free and available to any radio system in the world. A Bluetooth radio link has a maximum data transfer rate of 724kbit/s. The normal range of the Bluetooth radio is either 10 meters or 100 meters, depending on your Bluetooth equipment.

Start Bluetooth

Wireless Communication Switch On

First of all, turn on the wireless communication the personal computer.

Note:
For the details about the wireless communication switch, please refer to the user's manual that came with the personal computer.

1. Start Bluetooth Manager

Go to [Start]-[Program]-[Toshiba Bluetooth Software]-[Bluetooth Manager].

After Bluetooth Manager has started, it resides permanently on a task bar as the following figure shows and the icon image changes according to the situation of operation.

To power on the power supply of Bluetooth module, right-click [Bluetooth Manager] icon on the task bar, and select "Power on".
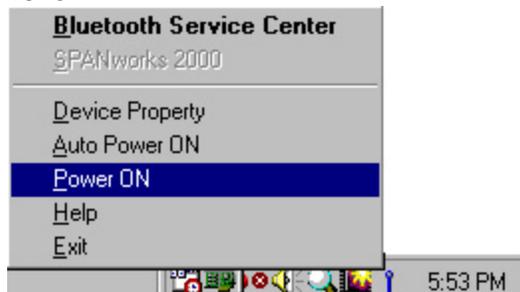
Note:
In case of selecting "Auto Power ON", the power supply of Bluetooth module is automatically powered on after the Bluetooth Manager start at the next time.

Bluetooth Manager icon on the task bar shows that the Bluetooth module is now available to connect.

2. Start Bluetooth Service Center

Start the Bluetooth Service Center by selecting: [Start]-[Program]-[Toshiba Bluetooth Stack]-[Bluetooth Service Center].

The first view of Bluetooth Service Center is shown below. The service list view of the right pane shows the profile service that your PC has. In this case, the PC has COM6 and COM7 as a default virtual COM Ports.

Note: Default COM port number depends on the configuration of your PC.
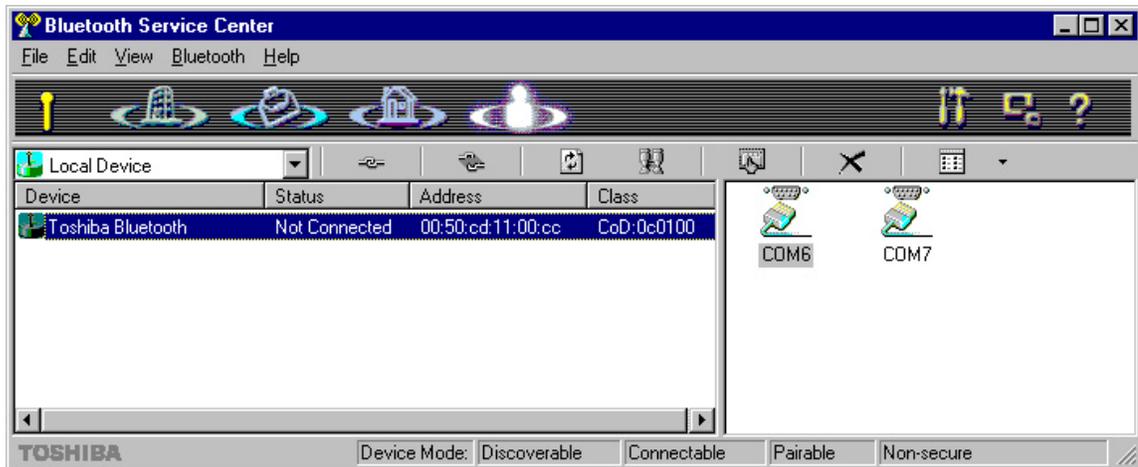
3. Start Device Discovery

The Device Discovery function detects the Bluetooth devices within range. Click [Bluetooth] on the menu bar in Bluetooth Service Center. Select [Device Discovery] in the pull-down menu. It can also be performed by clicking [icon] [Device Discovery] icon on the tool bar.
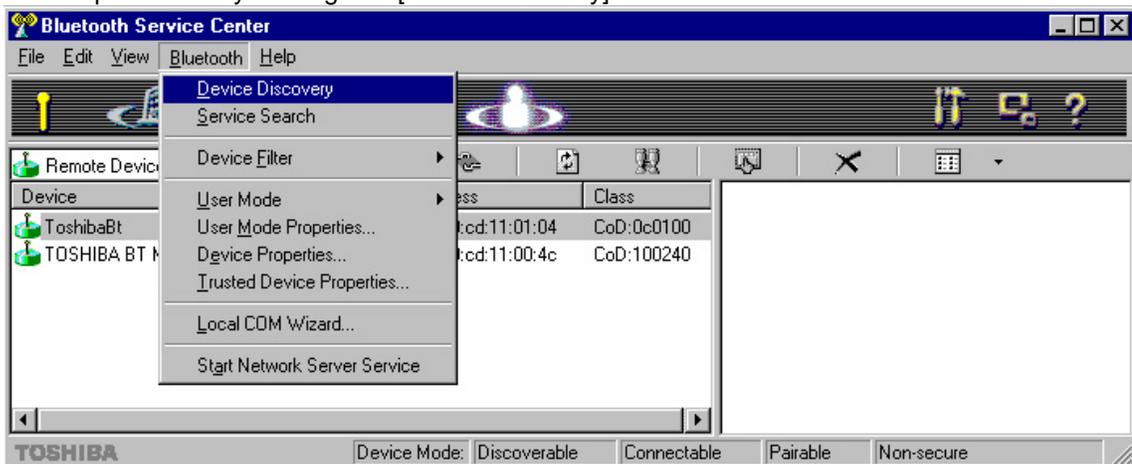
Regarding the remote device to connect, the following information is required in advance.

- Device Name: e.g. Toshiba Bluetooth
- Device Address: e.g. 00:50:11:22:33:44
- Passkey (Password): in case of a passkey is set up by the remote side

5. Service Search for the Remote Device

After performed device discovery, discovered devices are listed in the device list view. Highlight the discovered device to connect and click [icon] [Refresh] icon. Service Search is started. Service Search is investigating what service a remote machine owns.
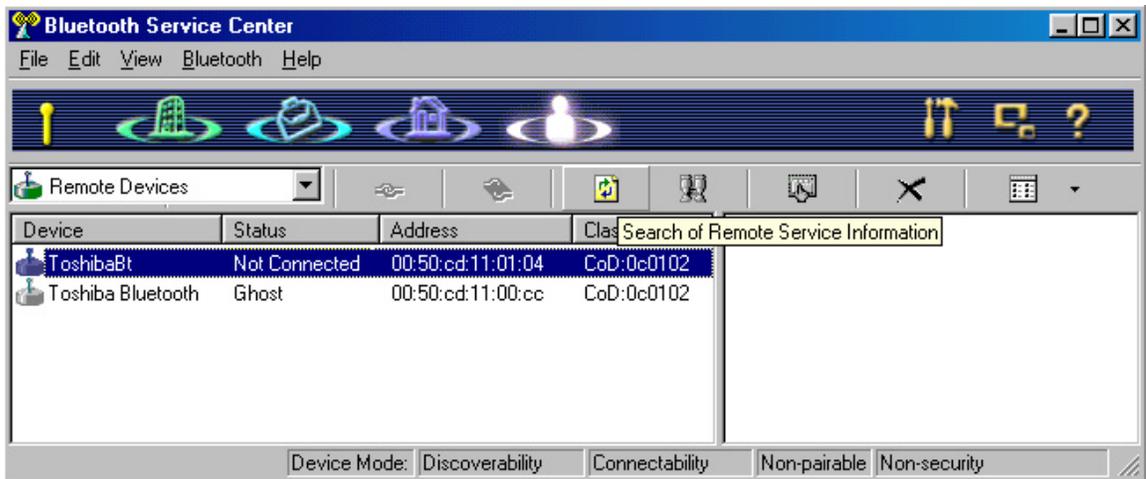
Network Server Service

In Bluetooth network service, the machine, which plays a role of a server, must start network service at first. The other machine will be a Client.

▶ If your machine is a server's role, read this section.

▶ If your machine is a client's role, go to next section.

Start Network Server Service

In Bluetooth network service, the machine, which plays a role of a server, must start network service at first. Go to [Bluetooth] of menu bar, select [Start Network Server Service].

The following dialog displays and click [OK] to store this dialog into the task bar.

After LANE Server Service started, service icon placed in the Task bar. It can be checked a service and a connection state as Server.

Also, you can find that LAN service started by appearing LAN service icon on the service list view in "Local Device".
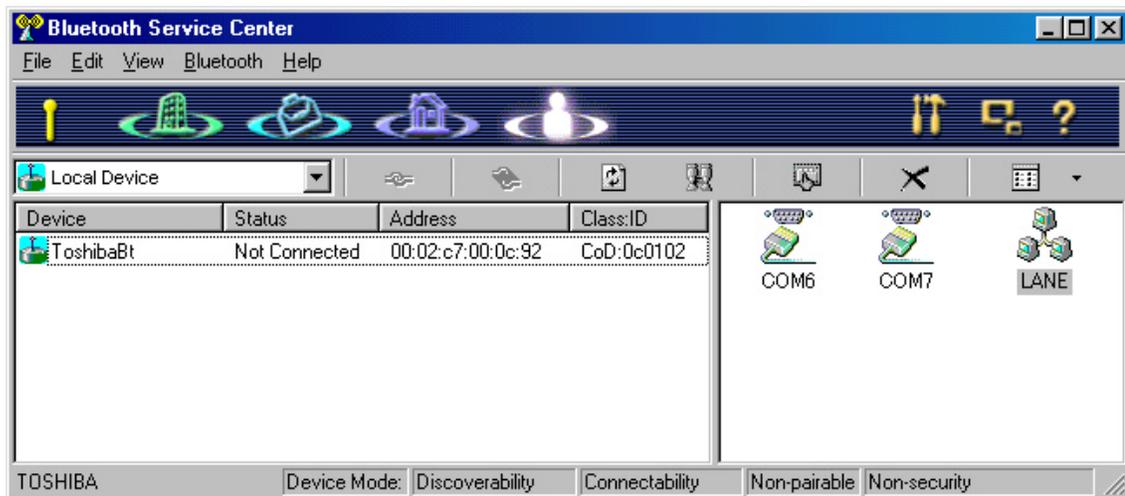
Connect/Disconnect Network

1. Start Bluetooth

Execute Device Discovery to detect the Server machine. If you need, <u>click here</u> to refer to the section of "Start Bluetooth".

Regarding the remote device to connect, the following information is required in advance.

- Device Name: e.g. Toshiba Bluetooth Server
- Device Address: e.g. 00:50:11:22:33:44
- Passkey (Password): in case of a passkey is set up by the remote machine

2. Connect Network

Caution! The machine used as a client must not start "Start LAN Emulation Service".
At client side, perform Device Discovery to detect a server machine and perform the following steps.

Tick the detected server machine in the device list view, and click 🔃 [Refresh] icon to do a service search. After that, you will be able to seen "LANE" icon in the service list view as the following figure.

Then, tick "LANE" icon, and click 🔗 [connect] icon. The Client Service starts to access to the Server machine.
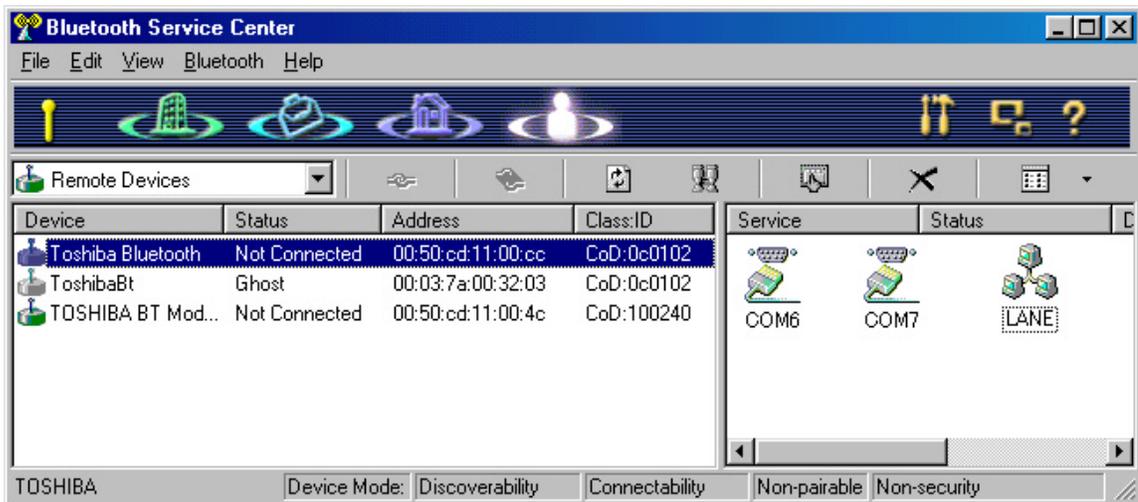
The following figure shows the connection established between the Server and the Client machine.
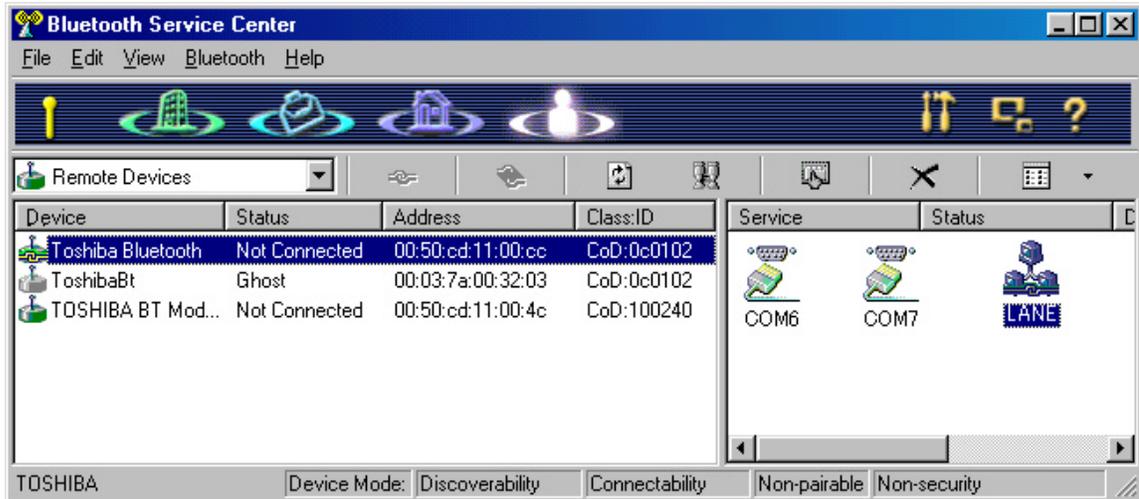
3. Disconnecting a Network

To disconnect Network Client, tick [LANE] in the service list view and click ![disconnect icon] [disconnect] icon on the tool bar.

End of Network Server Service

To end Network Service in a network group, on the server service machine, click [Network Server Service] icon on the task bar. The following dialog is displayed and then, click [End Service(X)] button.