Thin Client W150
TFT LCD 15"

U.S.A.

U.S.FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT
INFORMATION TO THE USER

NOTE : 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 and, if not installed and used in accordance with the instructions, 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 to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet of a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for assistance.

Changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Connecting of peripherals requires the use of grounded shielded signal cables.

DECLARATION OF CONFORMITY

WE ImageQuest CO., LTD.
Ami-ri Bubal-Eub Ichon-Si Kyungki-Do
467-860 KOREA

declare under our sole responsibility that the product:

Kind of equipment : COLOR LCD CLIENT

Type-Designation : W15L00001

to which this declaration relates is in conformity with the following standard(s) or other normative document(s)

Safety : EN 60950 : 1992 + A1, A2, A3, A4, A11
EMC : EN 55022 / 1998, EN 55024 : 1998
EN 61000-3-2 : 1995+A1 : 1998+A2 : 1998
EN 61000-3-3 : 1995

following the provisions of the Low Voltage Directive 73/23/EEC, 93/68/EEC and the EMC Directive 89/336/EEC.

Accredited testlaboratory:
TÜV Rheinland
Am Grauen Stein
51105 Köln

KOREA / Oct. 31, 2001
(Place and date of issue)

HONG KI, KIM
*(Name and signatu
authorized person)*

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1. Introduction of W150

Overview

“Easy installation, Optimized function, The least expenses”.
It is this web terminal’s strong points that you can expect when you utilize it in your environments.
Under the basic environments of server based on computing and internet connection speed of 56kbps, you can use various applications on the high performance servers based on Windows 2000 Server OS as well as internet connection.

Classification	W150
Operation Mode	WBT
CPU	Intel Strong ARM 206Mhz
SDRAM	16M
FLASH	8M
Operating System	Windows CE 3.0

Function

All the application programs are operated through the server, not in itself W150.
W150 as a client transfers to the server only the inputs of mouse and keyboard.
The result of application programs executed in the server are transferred to the client with the use of Protocol (RDP or ICA). Accordingly, traffic size that causes problems in the existing network is reduced considerably and no sophisticated is required for client.

Features

As Operation system, “Windows CE” is utilized

W150 has an open type architecture. It is run with a 32 bit multitasking and multithread operating system that supports various types of device.

- Utilize a kernel based on the architecture of WINDOWS NT.
- Support pre-occupied multi tasking and multi thread.

- Provides a user friendly GUI environment
- Booting process is not necessary since the operating system is stored on ROM.

Strong ARM CPU as of Intel

- Low powered (4W) operation is available.
- Size and Weight are reduced
- Low noise (no cooling fan is required)

Quick Booting Circuit Design (Compared to the general PC)

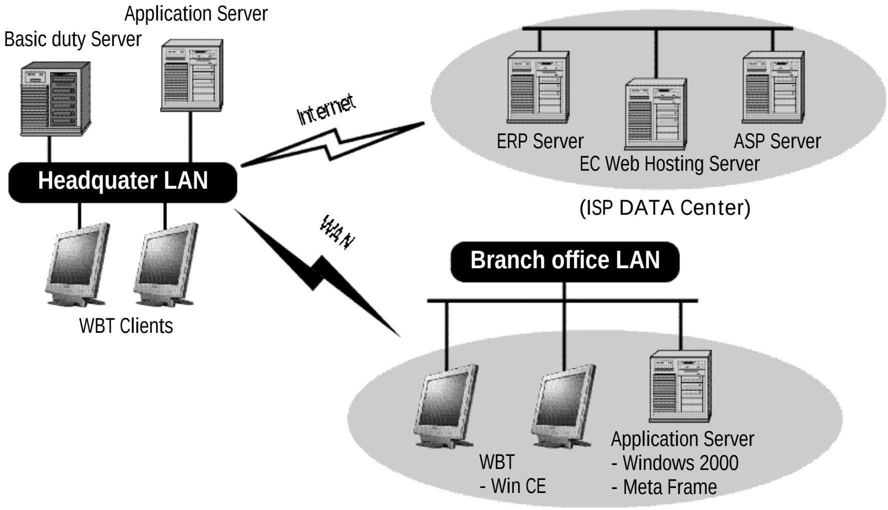
During the Power On, system booting is performed in the last task environment.

A/S Cost Reduced

Since there are no fixture elements such as HDD, FDD, CD-ROM, and cooing fan that are main causes of trouble, only minimum A/S is required.

Can be operated in the server environment

The program is executed in the server and only the results of execution (screen value) are displayed on the client.
Multi-user who are connecting to the server at the same time can execute own program independently.


Application Server
Basic duty Server
Internet
Headquater LAN
WBT Clients
WAN
ERP Server
ASP Server
EC Web Hosting Server
(ISP DATA Center)
Branch office LAN
WBT
- Win CE
Application Server
- Windows 2000
- Meta Frame

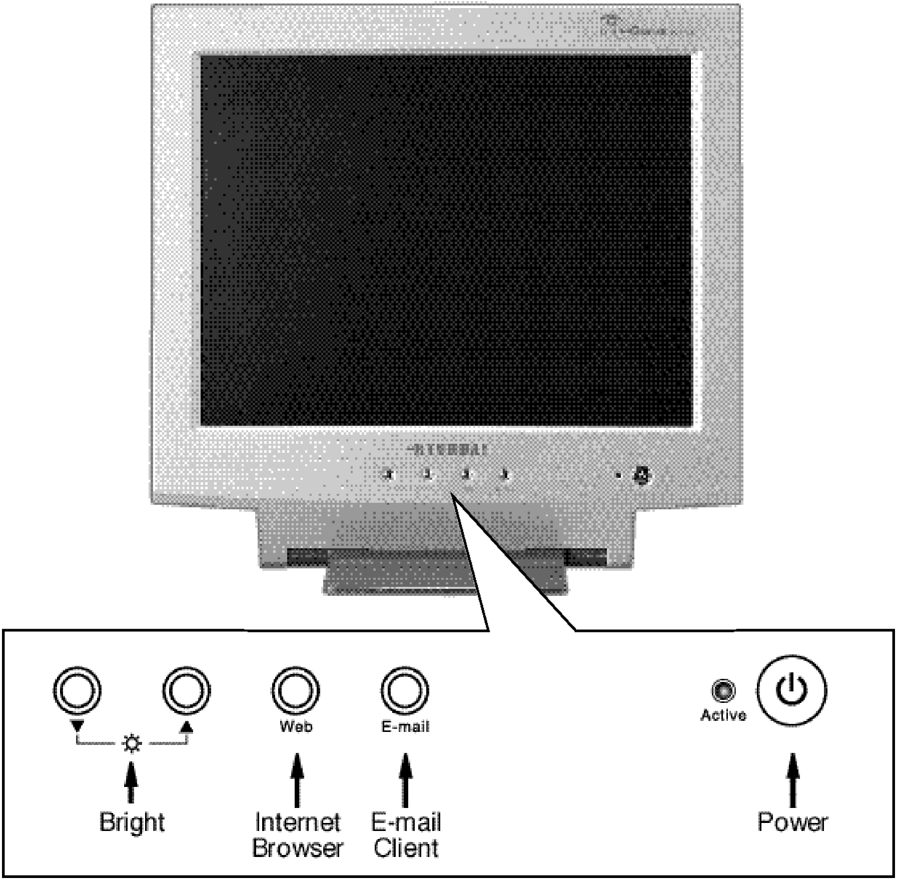
2. Before the operation

In the section, the structure and setup method of W150 is described.

System Structure

You should be familiar with the system structure for the proper connection of peripheral devices. Basic parts supplied include a mount (Main body), keyboard, mouse, adaptor, and AC power cord.

° **Front Side of W150**


Web
E-mail
Active
Bright
Internet Browser
E-mail Client
Power

Hot Keys

Power

If you put briefly this button for screen on/off.
The system is reset if you put the button for 3 seconds or longer.

Web

If you put this button, with the server connected state, Internet Explore Window of server is displayed.

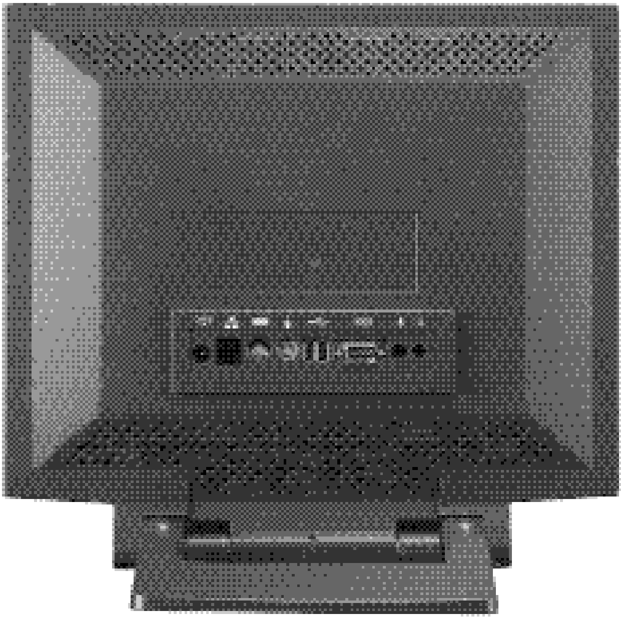
E-mail

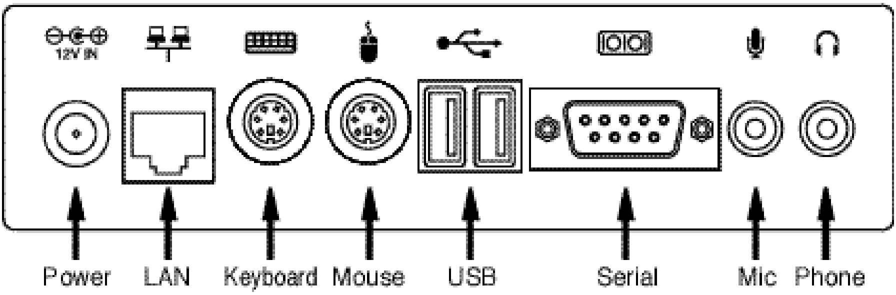
If you put this button, with the server connected state, Outlook Express of Window server is displayed.

Bright

This is used to adjust the brightness of the screen. Press “ ° “„to brighten the screen, and press “ ° “Âto darken it.

° Rear of W150





ICON	NAME	Functions Description
	USB (Optional)	This is a typical aerial bus. An external device that supports USB is faster than a serial port and easy to connect. Since USB supports the data transmission rate of 12Mbps, any types of peripheral devices can be connected without worrying about the operation speed. In addition, it can accommodate up to 127 devices. Moreover, connection can be made during the PC operation as well. No power of peripheral devices is required.
IOIOI	RS-232C (Optional)	This is connected to D-type connector that consist of 9 pins and interfaces with other serial device for transmitting/receiving data
🖱	Mouse	PS/2 Port, connected to MINI-DIN connector made up of 6 pins.
⌨	Keyboard	
🎧	Phone	Input jack for speaker
🎤	MIC	Input jack for microphone
🖧	LAN	Single line for digital transmission This interface is connected to a RJ-45 Jack made up of 8 pins
12V IN	Power	This is connected to an adapter that supplies power to the system

System Connection

In the proceeding section, the system connection order and method are described.
The power should be off during the system connection.

Connecting Keyboard

Connect the keyboard to its port after checking whether the port is PS/2.

Connecting Mouse

Connect the mouse to its port after checking whether the port is PS/2.

Connecting LAN

Connect the RJ-45 jack to the LAN port.

Connecting Adapter

Connect the adapter to the POWER port and outlet.

Connecting Speaker and Microphone

Connect the speaker or earphone to Phone port and the microphone to the MIC port.

Connection of External Device

W150 has RS 232-C port and USB port for accommodating additional external device.

Serial Port

Serial port can be connected to an external modem or other device that support serial Device.

USB Port

USB Port can be connected to a peripheral that support USB.

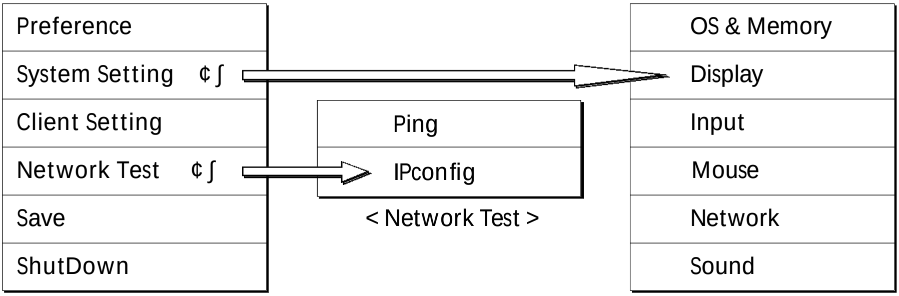
3. Operation of W150

Setup of Operating Environment

In this section, the operation of W150 under the server setup environment is described. For more details, ask your server manager.

ß ¢Menu window Composition

You should go through the following steps in order to set up W150 Properties. Menu window is displayed if you click right button of mouse from the desktop screen Menu window is composed following.


Preference
System Setting ¢∫
Client Setting
Network Test ¢∫
Save
ShutDown
Ping
IPconfig
OS & Memory
Display
Input
Mouse
Network
Sound

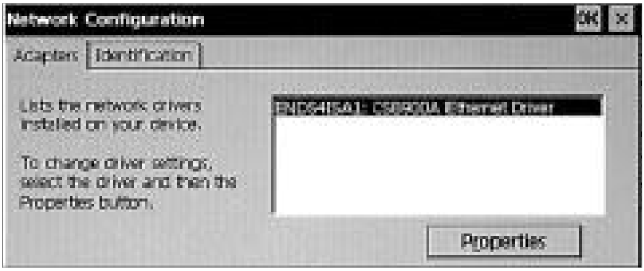
< Menu window >

< Network Test >

< System Setting >

ß ¢Setup of Network

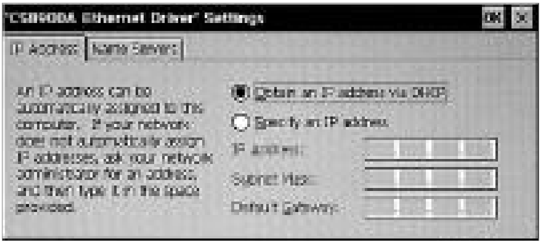
1. You can click “System setting“ ° ÊNetwork“ from Menu window.


Network Configuration
OK
×
Adapters
Identification
Properties

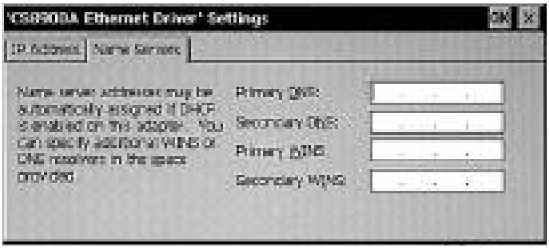
Lists the network drivers installed on your device.

To change driver settings, select the driver and then the Properties button.

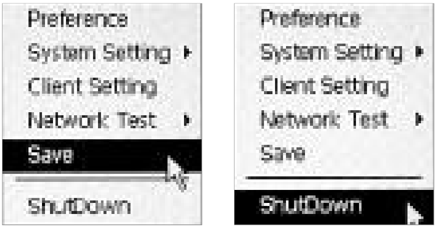
2. Click “property“ of Adaptor tap.


'CS8900A Ethernet Driver' Settings
OK
×
IP Address
Name Servers
Obtain an IP address via DHCP
Specify an IP address
IP address:
Subnet Mask:
Default Gateway:

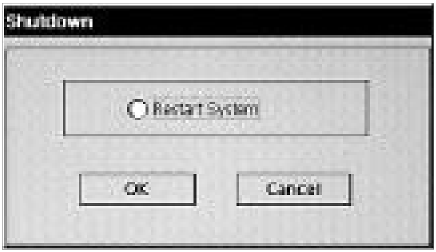
3. Select one of the following options from the “IP Address“ tab
   - If the network uses Dynamic Host Configuration Protocol (DHCP), click the above “Obtain an IP Address via DHCP“.
   - If you want to use Static IP information allocated to you, click the below “Specify an IP Address“ and then, enter IP Address, Subnet Mask, and Gateway.
4. If the network requires DNS or WINS setup, you can select “Name Servers“ tab and then, enter DNS or WINS information.


'CS8900A Ethernet Driver' Settings
OK
×
IP Address
Name Servers
Primary DNS:
Secondary DNS:
Primary WINS:
Secondary WINS:

5. You can click “OK“ in order to finish.
6. Select “save“ from Menu window to save setup.
7. Select “shutdown“ from Menu window to apply setup.

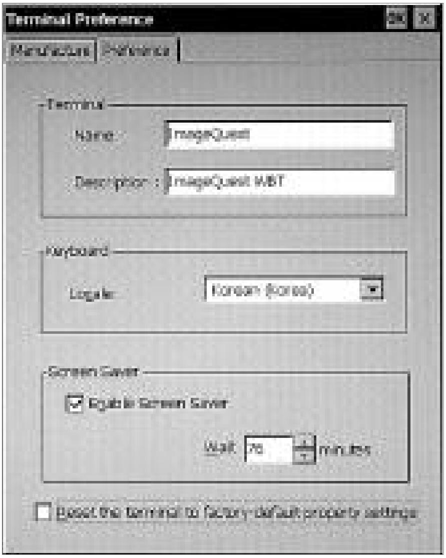

Preference
System Setting
Client Setting
Network Test
Save
ShutDown
Preference
System Setting
Client Setting
Network Test
Save
ShutDown

8. You can check “Restart system“ and click “OK“. Then, W150 is re-booted.


Shutdown
○ Restart System
OK
Cancel

ß Setup of Preference

Click “Preference“ from Menu window to display Terminal Preference window.
Terminal Preference has the following two tabs.


Terminal Preference
OK
×
Manufacture
Preference
Terminal
Keyboard
Screen Saver
minutes

Name : ImageQuest

Description : ImageQuest WBT

Locale: Korean (Korea)

☑ Enable Screen Saver

Wait 75 minutes

☐ Reset the terminal to factory-default property settings

Manufacture	: It shows factory-default settings and operating system version information.
Preference	: It enables you to set the name and information of this terminal, type of keyboard and screen saver function. If you select the bottom option, the terminal environment will be reset to factory-default settings.

ß Setup of Keyboard Features

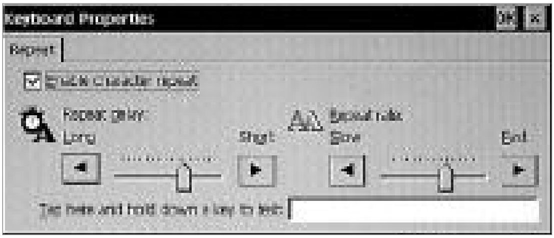
Keyboard features are changed based on you requirements and the type of board keyboard used.

Repeat delay : Keyboard characters are displayed repeatedly.
(Ex : time passed until the next character is recognized during the key pressing.)

Repeat Rate : The rate in which characters are repeated by the keyboard.

You should go through the following steps in order to change keyboard features.

1. Click “System Setting“ ° ÊInput“ from Menu Window.


Keyboard Properties
OK
×
Repeat
Repeat delay:
Long
Short
Repeat rate:
Slow
Fast
Tap here and hold down a key to test:

☑ Enable character repeat

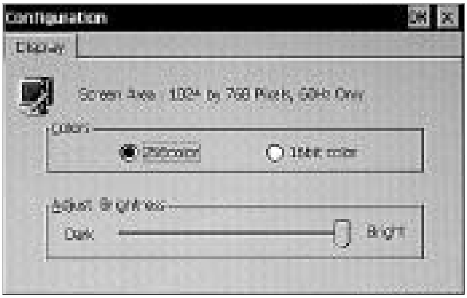
2. Use the mouse to drag Repeat delay Slider toward left or right in order to change Repeat delay.
3. Use the mouse to drag Repeat rate Slider toward left or right in order to change Repeat rate.
4. Then, click “OK“

ß Setup of Display Features

Adjust of colors and Brightness rate

You should go through the following steps in order to change display settings.

1. Click “System Setting“ ° ÊDisplay“ from Menu window.


Configuration
OK
×
Display
Colors
Adjust Brightness
Dark
Bright

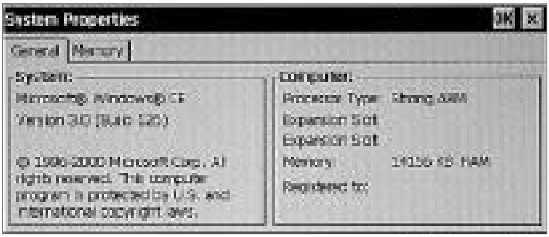
Screen Area : 1024 by 768 Pixels, 60Hz Only

● 256color ○ 16bit color

2. Select the desired colors & Adjust brightness.
3. Click “OK“.

ß System Properties

You can click “System Setting“ ° ÊOS & Memory“ from Menu window.
You can display system information by clicking General.



System:
Microsoft® Windows® CE
Version 3.0 (Build 126)

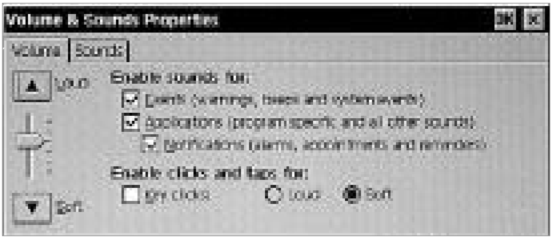
© 1996-2000 Microsoft Corp. All rights reserved. This computer program is protected by U.S. and international copyright laws.

Computer:
Processor Type: StrongARM
Expansion Slot
Expansion Slot
Memory: 14156 KB RAM
Registered to:

You can display a window for managing system memory by clicking Memory.

ß Volume & Sound Properties

You can click “System Setting“ ° ÊSound“ from Menu window.
You can drag the audio slider bar on either side of it for volume adjustment.



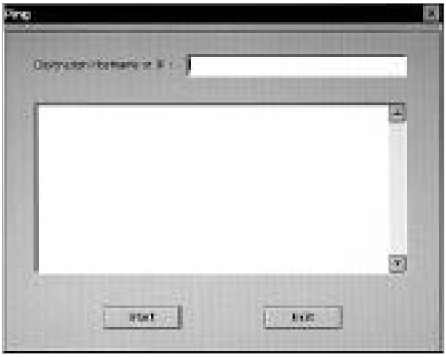
Enable sounds for:
☑ Events (warnings, beeps and system events)
☑ Applications (program specific and all other sounds)
☑ Notifications (alarms, appointments and reminders)

Enable clicks and taps for:
☐ Key clicks ○ Loud ● Soft

Network Environment View

ß Ping

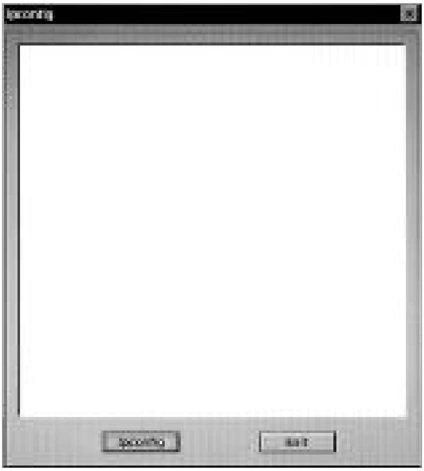
Click “Network Test“ ° ÊPing“ from Menu window to open “Ping“ window. You can check the connection condition when typing the opposite side IP or name on the “Destination Hostname or IP“ section and pressing the “Start“.


Ping
Destination Hostname or IP :
Start
Exit

ß Ipconfig

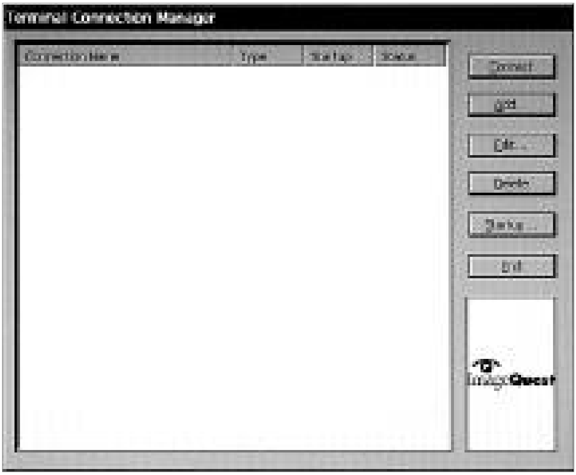
Click “Network Test“ ° ÊIpconfig“ from Menu window to open “Ipconfig“ window.

When clicking the “Ipconfig“ button, the information of the operating network will appear.


Ipconfig
Ipconfig
Exit

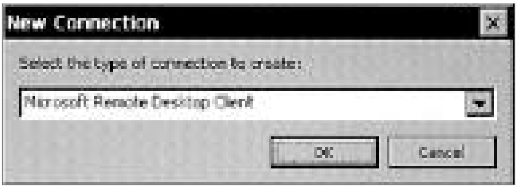
Terminal Connection Manager

This is used when connecting the network of W150. In case you fail to setup Initial Start or Automatic Start Connection, Terminal Connection Manager is displayed automatically during the start and end of W150. The Host (Server) and Client (Terminal) are recognized based on the connection state. You can create, edit, and delete network connection Terminal Connection Manager window.


Terminal Connection Manager
Connection Name
Type
Startup
Status
Connect
Add
Edit...
Delete
Startup...
End
ImageQuest

ß New Connection Creation

1. Click “Add“ in Terminal Connection Manager Window in order to display New Connection window.

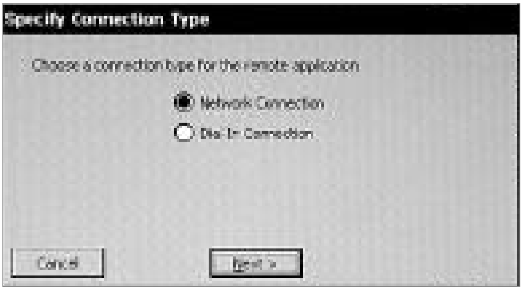

New Connection
OK
Cancel

Select the type of connection to create: Microsoft Remote Desktop Client

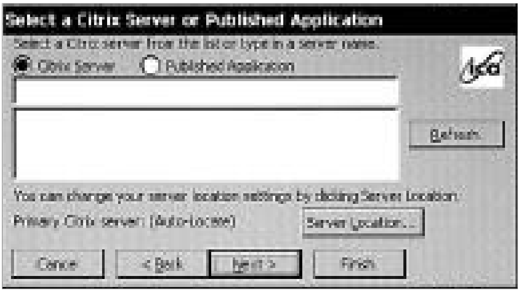
2. Select one of the following two connection protocols.
   - ° §Citrix Independent Computing Architecture Protocol (ICA)
   - ° §Microsoft Remote Desktop Client Protocol (RDP)
3. Then, click “OK“. Click “Cancel“ to return to the previous window.

° Additional Creation of ICA Connection

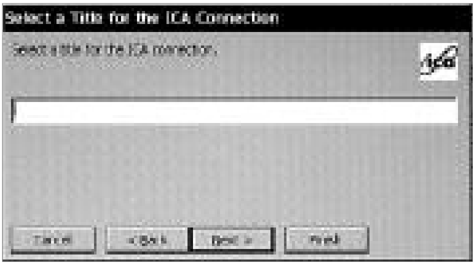
1. Select Citrix ICA Client of New Connection window in order to display the Specify Connection Type Window.


Specify Connection Type
Choose a connection type for the remote application
● Network Connection
○ Dial-In Connection
Cancel
Next >

2. Specify connection type.
   - ° Network connection : Direction connection line is required as in the case of
   - ° Network Connection 10/100Base-T Dial-in connection : modem is used.
3. Then, click “Next“.
4. All available Citrix server or application on the servers will be inquired and recognized. Select the required servers or application. If the server list doesn’t appear, search it again using “Refresh“ or type the server name or IP to connect directly.

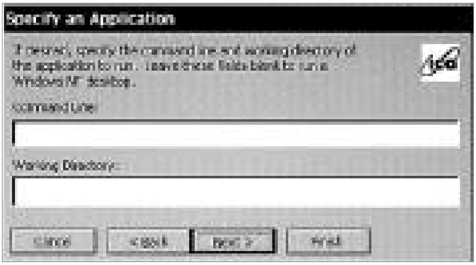

Select a Citrix Server or Published Application
Select a Citrix server from the list or type in a server name.
● Citrix Server
○ Published Application
ICA
Refresh
You can change your server location settings by clicking Server Location.
Primary Citrix server: (Auto-Locate)
Server Location...
Cancel
< Back
Next >
Finish

5. Then, click “Next “. If you select “Finish“, following option will be saved without specification.
6. The Connection Name of Terminal Connection Manager can be changed on the following window.

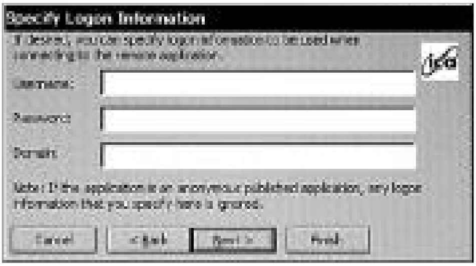

Select a Title for the ICA Connection
Cancel
< Back
Next >
Finish

Select a title for the ICA connection.

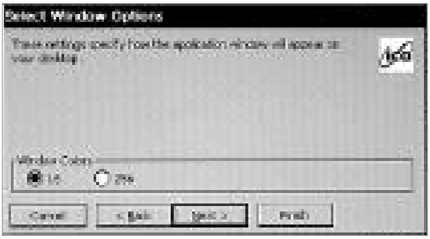
7. Then, click “Next“.
8. Configuration can be made in such a way that same applications can be used from the selected server. You can leave it blank in order to specify Command Line and Working Directory or to use windows NT Desktop.


Specify an Application
Command Line:
Working Directory:
Cancel
< Back
Next >
Finish

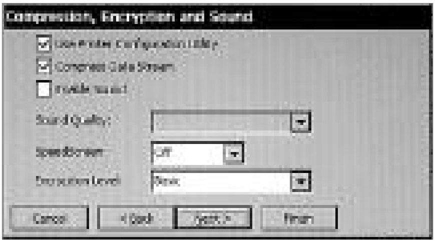
9. Then, click “Next“.
10. Specify Username, Password, and Domain in order to logon to the server automatically.


Specify Logon Information
Username:
Password:
Domain:
Cancel
< Back
Next >
Finish

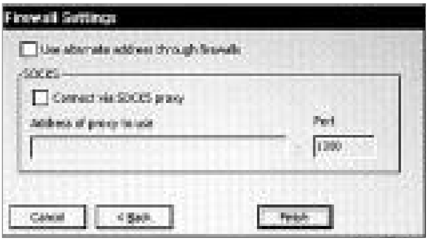
11. Then, click “Next“.
12. Select Window Colors desired on Select Window Option Window.


Select Window Options
Window Colors
16
256
Cancel
< Back
Next >
Finish

13. Click “Next“.


Compression, Encryption and Sound
Compress Data Stream
Enable Sound
Sound Quality:
SpeedScreen
Encryption Level
Cancel
< Back
Next >
Finish

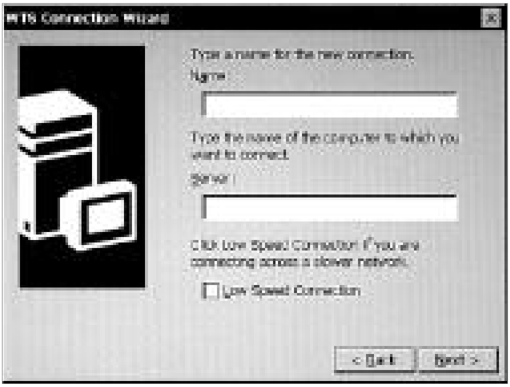
14. You can configure the ICA session.
    - Compress Data Stream - select this when connection is made with modem (modem dial-up) or WAN(Wide Area Network).
    - Enable Sound - select this if you use 10/100Base T as LAN (Local Area Network). When using Sound through WAN and modem, increasing usage of bandwidth causes some problems.
    - If you use modem or WAN, set “Sound Quality“ to LOW and “SpeedScreen“ to ON.
15. Click “Next“. Then, Firewall Settings window is displayed.


Firewall Settings
SOCKS
Port
1080
Cancel
< Back
Finish

16. You can enter Firewall information in Firewall Settings window if the network requires Firewall setup. Then, click “Finish“.
17. Since the installation of ICA connection is over, connection the server is ready.

° Additional Creation of RDP Connection

1. Select Microsoft Remote Desktop of New Connection window.
   Then, Windows Terminal Server (WTS) Connection Wizard Window is displayed.



WTS Connection Wizard

Type a name for the new connection.

Name:

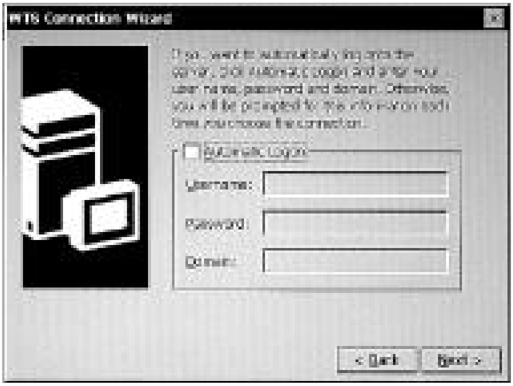
Type the name of the computer to which you want to connect.

Server:

Click Low Speed Connection if you are connecting across a slower network.

☐ Low Speed Connection

2. Enter a name for new connection to the name area.
3. Enter the name of IP address of server to be connected to the server area.
4. Check Low Speed Connection when connection to the server is made through low Bandwidth lines such as WAN of serial line.
5. Then, click “Next“.
6. When desiring to logon automatically to the server, you should select automatic logon and then, specify Username, Password, and Domain.



WTS Connection Wizard

☐ Automatic Logon

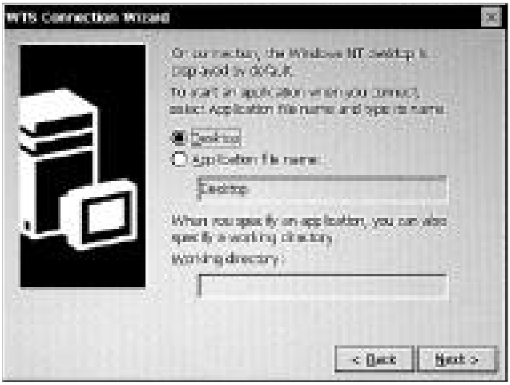
Username:

Password:

Domain:

7. Then, click “Next“.

8. The application that is selected instead of desktop can be configured. You can select Application File Name and specify Command Line and Working Directory. Or you can leave it blank in order to use Windows NT desktop.



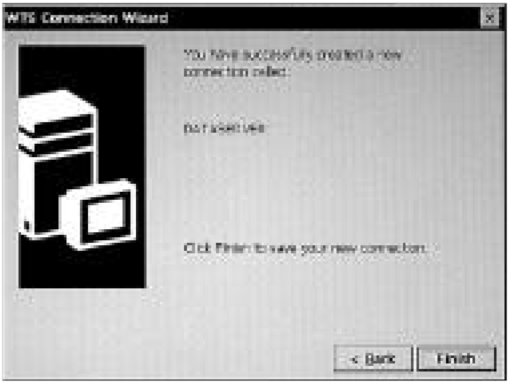
On connecting, the Windows NT desktop is displayed by default.
To start an application when you connect, select Application file name and type its name.

● Desktop
○ Application file name:

Desktop

When you specify an application, you can also specify a working directory.
Working directory:

9. Then, click “Next“.
10. Then, click “Finish“.



You have successfully created a new connection called:

Click Finish to save your new connection.

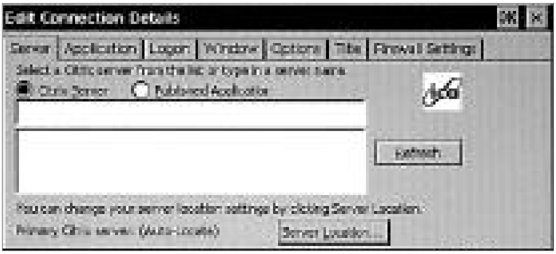
You are now ready to connect to the server since the installation of WTS Connection Wizard has been completed.

ß Connection Editing and Deletion

° Editing of ICA Connection

ICA Connection editing is performed through the following steps.

1. Select ICA Connection to be edited from the Connection Name List of Terminal Connection Window.
2. Click “Edit “. Then, the Edit Connection Details window is displayed.


Edit Connection Details
OK
×
Server
Application
Logon
Window
Options
Title
Firewall Settings
○ Citrix Server
○ Published Application
Refresh
Server Location...

Select a Citrix server from the list or type in a server name

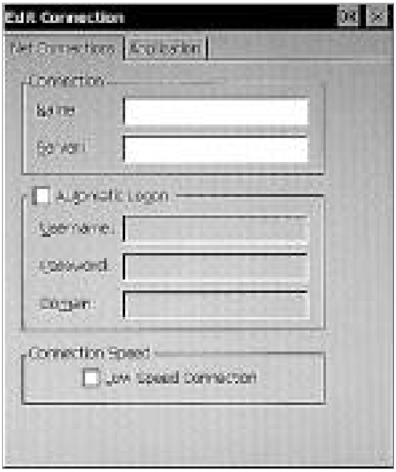
You can change your server location settings by clicking Server Location.

Primary Citrix server: (Auto-Locate)

3. You can modify the information on each tap. Refer to the “Additional Creation of ICA Connection“ for the related tap information.

ß Editing of RDP Connection

1. Select RDP Connection to be edited from the Connection Name List of Terminal Connection Window.
2. Click “Edit“. Then, the Edit Connection Details window is displayed.


Edit Connection
OK
×
Net Connections
Application
Connection
Name:
Server:
☐ Automatic Logon
User name:
Password:
Domain:
Connection Speed
☐ Low Speed Connection

3. The Edit Connection Window has the following two taps.
    - ° Net Connections : Used to edit connection or logon automatically.
    - ° Application : Used to go automatically to the file name or working directory path whenever starting the session.
4. Change the Parts requires to be changed Net Connection or Application Area.
5. Then, click “OK“ after the completion.

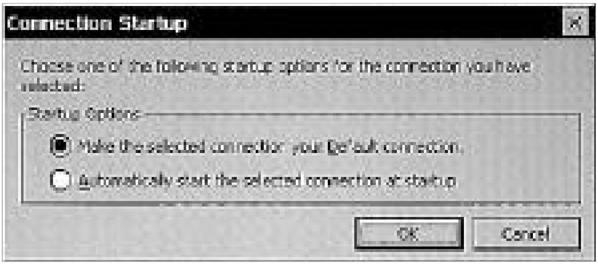
° Connection Deletion

1. Select Connection Name of Terminal Connection Manager Window.
2. Then, click “Delete“.
3. Click “Yes“ for confirmation.

ß Startup-up Connection setup

Automatic connection to the server is possible every time the session is started.

1. Select a Connection from the Connection Name List of Terminal Connection Manager Window and Click “Startup“. Then, the Connection Startup Window is displayed.



Connection Startup

Choose one of the following startup options for the connection you have selected:

Startup Options

● Make the selected connection your Default connection.

○ Automatically start the selected connection at startup

2. Select the following Startup option

   Make the selection your default connection

   Connection selected from Terminal Connection Manager is used as default. This default connection is highlighted when W150 power on and Terminal Connection Manager Screen is displayed.

   Automatically start the selected connection at startup

   Every time you use W150, the system is started up automatically with the selected connection

3. Then, click “OK“.

ß Server Connection

Terminal Connection Manager lists all the network connections available for use. You Should go through the following steps in order to connect to the server.

1. Select a Connection Name on the list.
2. Click "Connection" or double click "Connection Name". If the connection has been defined as automatic logon, W150 is connected and you are logged on automatically.
3. In case the logon is not automatic, Window Logon Information Window is displayed. Enter logon with the prompt.

ß Using of W150 Hot Keys

Hot keys are used to simplify the switching process between active sessions. By using hot keys instead of Terminal Connection Manager, you can switch automatically each program through simple key manipulation. In the below, several W150 hot keys are specified as below.

< W150 Hot Keys >

Hot Key	Function
CTRL+ALT+up arrow	Changes to Up between active sessions
CTRL+ALT+Down arrow	Changes to Down between active sessions
CTRL+ALT+Home	Changes automatically to default sessions
CTRL+ALT+END	The screen is changed to directly to W150 Connection Manager
<F2>	The screen is changed to Terminal Preference Screen in case Connection Manager is run.

If the hot keys are not working, see the instruction of Multi Connection Start.

< Multi Connection start >

W150 can perform multi connections at the same time. The number of connection is connections is limited by the RAM capacity.

1. Press CTRL+ALT+END to access to W150 Connection Manager.
2. Select Connection Name and then, click "Connect".

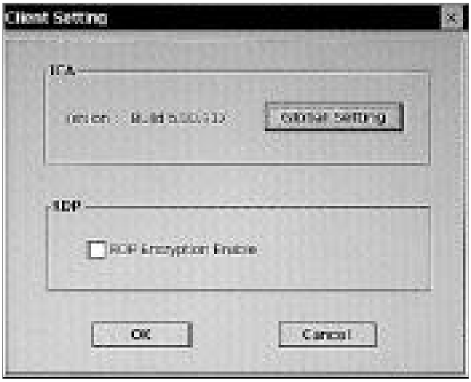
You should go through the following steps in order to change the connection.

1. Press CTRL+ALT+END to access to W150 Connection Manager.
2. Select Connection Name and then, click “Connect“.
3. Or press CTRL+ALT+UP or CTRL+ALT+DOWN in order to change the connection.

Client Setting and Save

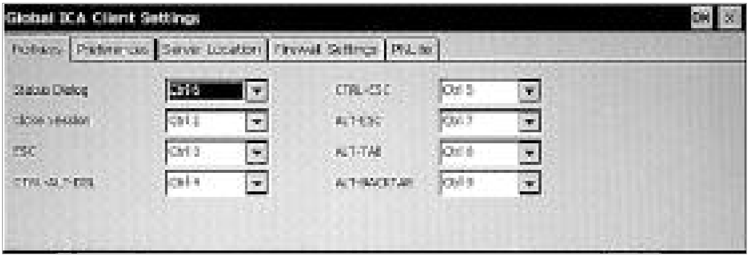
ß Client Setting

Click “Client setting“ from Menu window to open “Client Setting“ window.


Client Setting
ICA
Global Setting
RDP
☐ RDP Encryption Enable
OK
Cancel

1. ICA Setting

Press “Global Setting“ button in order to change various settings on the window.


Global ICA Client Settings
OK
Hotkeys
Preferences
Server Location
Firewall Settings
PNLite
Status Dialog
Close Session
ESC
CTRL-ALT-DEL
CTRL-ESC
ALT-ESC
ALT-TAB
ALT+BACKTAB

2. RDP Setting

You can select RDP Encryption Enable option.

ß Save

You can press “Save“ from Menu window, and then, The information that users have changed is saved on the FLASH ROM, so it cannot disappear if the power is gone off.

Ending the Operation

ß Disconnecting

Click the “System exit“ in its Windows Start menu. “Logoff“ or “Disconnect“ will be displayed. “Logoff“ closes all application programs and “Disconnect“ leaves application programs operating and just disconnects from the server. If you end the system using “Disconnect“, the same environment as before will be configured when connecting the same account.

ß Power on/off of W150

In case you do not use W150, you can turn the power off just by pressing the “power” button on the front cover of W150. Then, it consumes a little power.

And if you will not use W150 for a long time, please disconnect the adapter cord from the power connecting jack in the rear cover of product or power cable from the wall outlet.

4. Troubleshooting

The followings provide some solutions to common problems when using setting up your terminal

The monitor screen is blank.

Check whether the power cord has been inserted properly into the terminal
Check whether the monitor is properly plugged into an AC outlet.
Check whether the Terminal is OFF.
Check whether the system is on suspend mode.

The mouse does not work.

Check whether the mouse jack insert properly into the mouse port.
Check whether the mouse ball is operated freely.

The Keyboard does not respond.

Check whether the keyboard has been connected properly to the keyboard port Check whether power is being supplied properly to W150.

The Network connection does not work

Check whether the cables are connected properly to the LAN port.
Verify the network settings.
Check whether the network address is valid.
Verify the configuration of the server terminal.

5. System Specification

The specification of W150 is specified as below :

ß Hardware specification

CPU	Intel Strong ARM 32bit RISC Processor 206 MHz
Flash memory	8MB FLASH
RAM memory	16MB SDRAM
Audio	16-bit Stereo
Vided	1024 x 768 16bit True Colors

ß Communication and Input/Output Specification

Networking Protocol	Ethernet 10 Base T TCP/IP with DNS, DHCP, and PPP
Communication protocol	Microsoft RDP Ctrix ICA
Serial Port	1 x DB-9 RS232C Serial Port
USB Port	2 x USB Port
Audio Port	Earphone Jack Microphone In
Keyboard and Mouse Port	Keyboard and Mouse Port (PS/2 Keyboard and Mouse included)
Power	12V DC In