CTR-800-11W

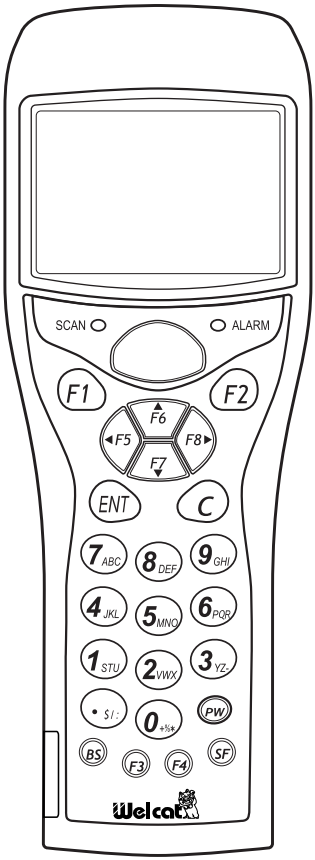
User's Manual

Welcat

AUTO I.D. PRODUCTS

Wireless Hand-held Terminal
CTR-800-11W

Communication Cradle HIF-51



SAFETY PRECAUTIONS

- Be sure to read these precautions before using this product in order to insure safe operation of the equipment.
- Keep this User's Manual on hand for future reference whenever you may need it.

Strict observance of these warning and caution indications are a **MUST** for preventing accidents which could result in bodily injury and substantial property damage. Make sure you fully understand all definitions of these terms and related symbols given below, before you proceed to the text itself.

This symbol indicates an item that can result in death or serious personal injury if ignored.

This symbol indicates an item that can result in serious personal injury or material damage if ignored.

Meaning of Symbols

A triangle inside indicates something you should be careful about.

A diagonal line through a circle indicates something you should not do.

A black circle indicates something you must do.

⚠ WARNING

Only use the specified battery pack.

Using a different type of battery pack could cause damage to equipment, battery-rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

Only use the specified charger for charging the battery pack.

Using a different type of charger could cause battery-rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

Only use the specified AC adaptor for Communication Cradle HIF-51.

Using a different type of AC adaptor could cause heat or fire, or damage to equipment.

Do not heat the battery pack, nor put it into fire or water.

Doing so could cause battery-rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

Do not attempt disassemble or modify the battery.

Doing so could cause battery-rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

Do not carry or store the battery pack together with metallic object such as ball-point pens, necklaces, coins, hairpins, etc.

Doing so could short-circuit the terminal pins, causing the batteries to rupture the battery fluid to leak, resulting in a fire, burn, bodily injury.

Do not use the battery if leakage, change of color or shape, or other abnormalities occur.

Doing so could cause fire, burn, bodily injury, or serious damage to property. If it brings close to fire, this cause ignition in leakage of battery fluid.

Avoid dropping the battery pack or letting it undergo any shock or impact.

Doing so could cause the batteries to break, generate heat, rupture or burn.

Do not charge the battery pack where any inflammable gases may be emitted.

Doing so could cause battery-rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

If battery fluid gets in your eyes, wash it out with clean water and contact a physician immediately.

If it is left, there is fear of loss of eyesight.

If battery fluid gets on your skin, or clothes, wash it off with clean water.

If it is left, there is fear of damage of skin.

Do not attempt disassemble or modify the battery charger and the communication cradle.

Doing so could cause excessive heat, fire, or electrical shock.

Never cut, damage or modify the power code of battery charger and communication cradle.

Doing so could cause excessive heat, fire, or electrical shock.

Do not place or charge the battery in the hot places such as a fire side, a stove side, under the burning sun, etc.

Doing so could cause battery-rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage □□□□□□□□□□□□□□

If there are problems or abnormalities, such as emitting smoke or strange odor found with communication cradles, turn off the power and unplug the AC power code.

Continued use in this condition could cause fire or electrical shock.

Do not stare into laser beam. Do not aim the laser at a person's eye.

The laser beam emitted through the reading window is harmful to the eyes.

Be careful not to hook a strap when carrying the terminal.

If strap is caught in an obstacle, it could cause injury or accident.

⚠ Caution

Only use the specified serial cable for Communication Cradle HIF-51.

Using a different type of cable could cause communication error or equipment trouble.

Do not place or use the terminal in the hot places such as a fire side, a stove side, under the burning sun, etc.

Doing so could cause fire, modification of a case or equipment trouble.

Do not place or use the terminal in high humid or dusty areas.

If moisture or dust will get into the terminal, resulting in failure, fire or electrical shock.

Do not use the terminal in the place of water, such as rain or shower.

If water will gets into the terminal, resulting in failure, fire or electrical shock.

Do not drop the terminal or subject it to strong impact or vibrations.

This could cause malfunction or failure.

Do cover or wrap up the equipment or AC adapter in a cloth or blanket.

Doing so could cause the unit to heat up inside, defouming its housing, resulting in a fire.

Keep the power cord away from any heating equipment.

Failure to do so could melt the sheathing, resulting in a fire or electrical shock.

Laser Safety

This product using the laser comply with US 21CFR1040.10.

This equipment is certified as a Class 2 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the equipment does not produce hazardous laser radiation.

FDA Regulations

U.S. Food and Drug Administration (FDA) has implemented regulations for laser products manufactured on and after August 2, 1976. Compliance is mandatory for products marketed in the United States. The labels on the product indicate compliance with the FDA regulations and must be attached to laser products marketed in the United States.

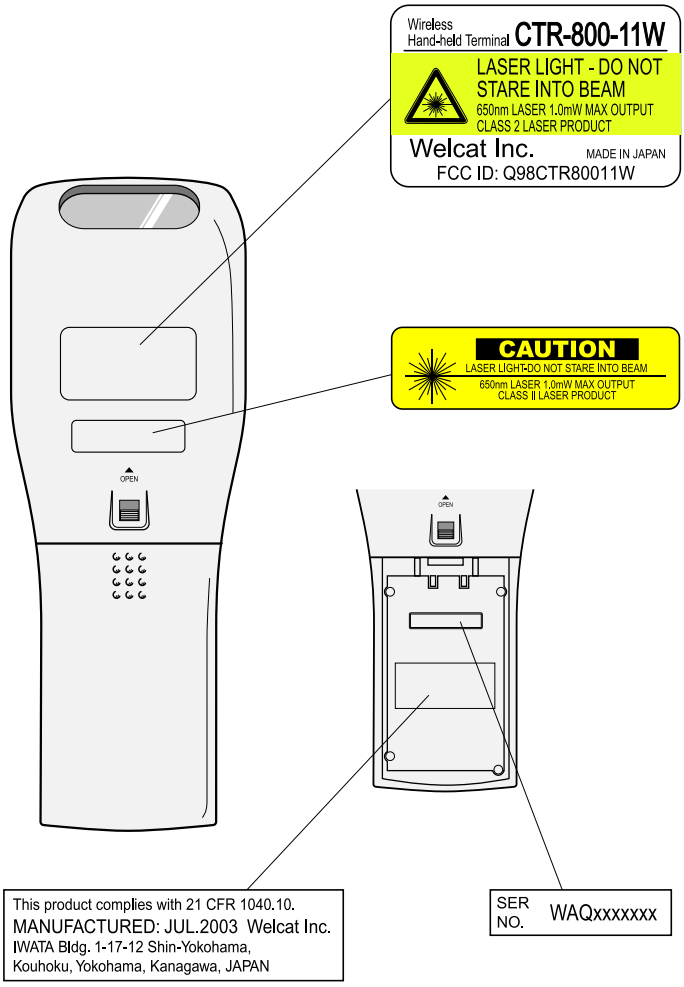
Caution:

Do not look into the laser beam source through the reading window or point the reading window towards the eyes. The laser beam emitted through the reading window is harmful to the eyes.

Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous invisible radiation exposure.

Class 2 laser scanners use a low power, visible light diode. As with any very bright light source, such as the sun, the user should avoid staring directly into the light beam. Momentary exposure to a Class 2 laser is not known to be harmful.

Product Labeling



FCC Statement

This Device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

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 on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning:

Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power Wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research. The CTR-800-11W has been tested and found to comply with the Federal Communications Commission (FCC) guidelines on radilo frequency energy (RF) exposures. The maximum SAR levels tested for the CTR-800-11W has been shown to be 1.02 W/kg at body.

Contents

Chapter 1 Quick Guide

Chapter 2 Hardware

Chapter 3 Software

Chapter 4 Setup

Chapter 5 FAQ

Chapter 6 Communication Cradle (HIF-51)

Appendix A System Menu Factory Settings

Appendix B Sample Barcode

Index

Introduction

Thank you very much for purchasing a CTR-800-11W Wireless Hand-held Terminal.
This user manual explains the hardware and the system program of the CTR-800-11W.
We hope the CTR-800-11W will improve efficiency of your business.

●The CTR-800-11W Manual consists of the following.

CTR-800-11W Hardware / System Menu User's Manual (this document)	Explains the fundamental functions and operation methods of the CTR-800-11W. This manual covers the required settings for communication and operations, as well as how to make the fundamental setup of the CTR-800-11W via the System Menu.

For use of the "WebGlider", please refer to the on-line manual included in the "WebGlider" package.

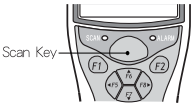
Enclosed Items

■CTR-800-11W 1
■Hand Strap 1
■Manual (This Document)..... 1

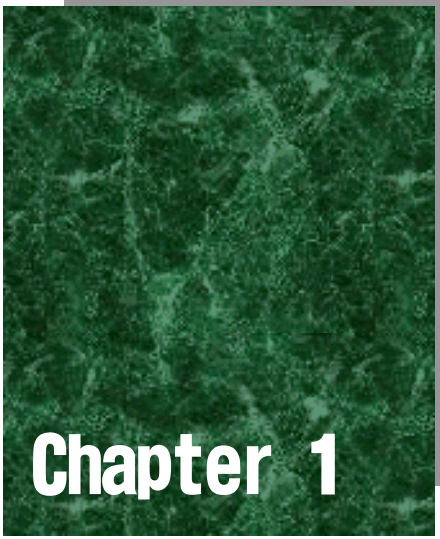
Optional Extras

○Battery pack (HBC-51)
○Access point (Our recommended Item)
○Charger (one-piece item: HQC-51 or 4-piece item: HQC-54)
○Protection Cover (HDC-51)
○"WebGlider", an integrated middleware package for web applications (WBG-800-01W)
○5250 Emulator "Handy 5250" for handy terminals (HTN-5250-01)
○PC Connection Cable (HOP-C031)
○Recmmended Printer Connection Cable (HOP-C032)
○Communication cradle (HIF-51)
○HIF-51 PC Connection Cable (WRS-AXC003A)
○HIF-51 Daisy-Chain Connection Cable (STP-C001A)
○File transfer program, Welfer II for Windows

Notational information

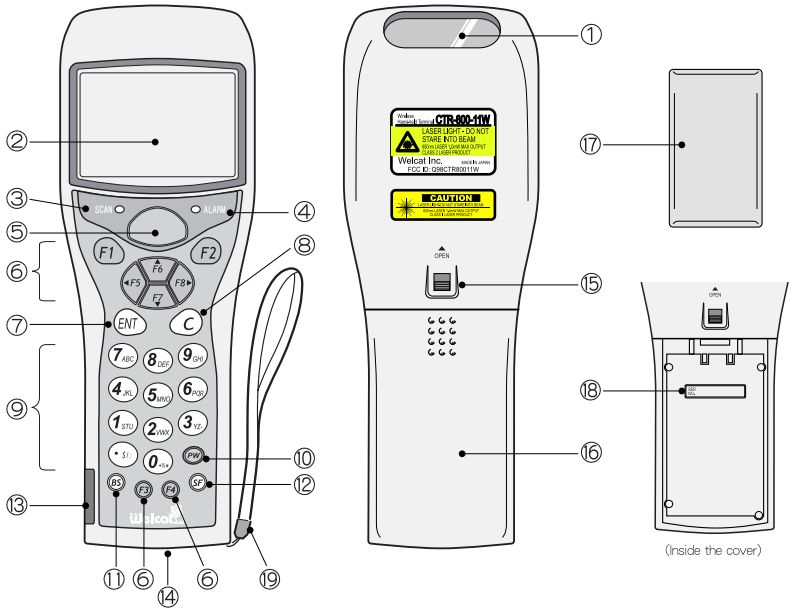
	Indicates a note you can refer to
	Indicates a caution
"CTR-800-11W" "Terminal"	The actual barcode reader.
Access point	The wireless communication interface to allow data to be sent between the CTR-800-11W and a PC connected to an Ethernet communicating via TCP/IP. Please use our recommended equipment based on the IEEE802.11b standard.
WLAN	Wireless LAN
Communication cradle (HIF-51)	A serial communication interface between the CTR-800-11W and a PC. Please purchase separately.
System program	The OS stored in the CTR-800-11W
System Menu	A function of the system program
The CTR-800 browser	The preinstalled CTR-800-11W browser. In the case where the browser is used to build a Web based system using the "WebGlider," the browser operates like a handy application.
WebGlider	"WebGlider" is an integrated middleware package for web applications (WBG-800-01W). Please purchase separately if needed.
Welfer II for Windows	The "Welfer II for Windows" is a file transfer program for serial communication. Please purchase separately.
S Drive	The data storage area for storing data files, parameter files, etc.
F Drive	The data storage area for applications, database master files, etc.
Battery pack	"HBC-51." Please purchase separately.
Scan key	Used when scanning a barcode. 
Numeric keypad	The number keys ⓪ to ⑨ and ⊙.
Daisy chain	The connection of two or more communication cradles (HIF-51) via an exclusive cable.

Manual Contents



Quick Guide

1-1 Part Names



1. Barcode Sensor
   The opening from where the barcode is read.

2. LCD (Liquid Crystal Display)
   Data and characters are displayed on the LCD.

3. LED Indicator
   If a barcode is read correctly, the light will turn green.

4. Warning LED
   Shows the signal reception state from an access point during wireless communications. (P.2-4)

5. Scan Key
   Press this key to read a barcode.

6. Function Keys (F1 – F8)
   Used for changing functions and cursor operation. (P.4-3)

7. ENT Key (Enter Key)
   Used when confirming an operation or entering in data.

8. Ⓒ Key (Cancellation Key)
   Used to delete entered data or to return to the previous screen.

9. Numeric Keys (⓪～⑨、⊙)
   Used to enter numbers and decimal points.

10. ⓅⓌ Key (Power Switch)

11. ⒷⓈ Key (Backspace Key)
    Erases the last character entered.

12. ⓈⒻ Key (Shift Key)
    Special functions can be accessed by pressing this key together with other keys.

13. IrDA Interface
    Communicates with a communication cradle (HIF-51) or an exclusive printer via IrDA.

14. RS-232C Interface
    Connects with an exclusive printer or a computer using the optional cable.

15. Battery Pack Lock Lever (P.2-10)
    When red is displayed, it is in a locked state.

16. Battery Cover (P.2-10)
    Always attach the battery cover while in use.

17. Battery Pack (optional) (P.2-9)
    After purchasing and before you use, charge the battery pack.

18. Serial Number
    The serial number is indicated inside the main part which contains the battery pack.

19. Hand Strap

1-2 Preparation before Use

Please carry out the following preparations before using the CTR-800-11W.

●Battery pack -HBC-51 - (optional)

The battery pack is required in order to use the CTR-800-11W. Please purchase separately and install it in the CTR-800-11W correctly. (P.2-10)

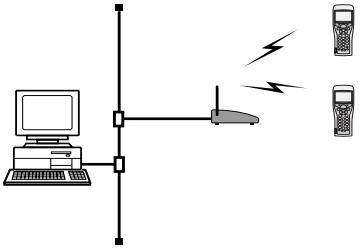
●Isn't the sensor dirty?

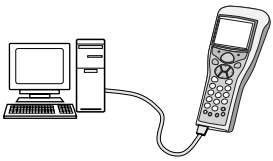
If the sensor is dirty, a barcode cannot be scanned correctly. When dirty, please wipe lightly with a soft cloth etc.

Please be sure to hold the CTR-800-11W when operating. It may fail if used while placed on the floor.
Do not place the CTR-800-11W on top of the communication cradle (HIF-51) as the unit may fall and cause damage to both the communication cradle and the CTR-800-11W.

1-2-1 Equipment Connections

Data entered can be transmitted from the CTR-800-11W to a host computer or the CTR-800-11W can receive data from a host computer.
The following are the methods for connecting to a host computer. Preparations required depend on the application environment.

Access Point and Wireless Communication	P.4-16
The CTR-800-11W communicates via wireless communication to a host computer through an access point which is connected to the Ethernet LAN. ■Purchased Separately Access Point (our recommended product), Ethernet cables, HUB For details about setting up a wireless network, refer to the Access point Manual and this document.	

Direct connection to a host computer via an RS-232C connector	P.4-8
The CTR-800-11W is connected to a host computer via the PC connection cable (HOP-C031) and communicates using RS-232C. ■Purchased Separately PC Connection Cable (HOP-C031)	

The communication cradle (HIF-51) is used to connect the CTR-800-11W to a host computer, and allows communication via IrDA	P. 4-8
A host computer and the communication cradle (HIF-51) are connected using the HIF-51 PC connection cable (WRS-AXC003A). The communication cradle communicates via IrDA. ■Purchased Separately Communication cradle (HIF-51) HIF-51 PC connection cable (WRS-AXC003A)	

If the communication cradle (HIF-51) is connected by a daisy chain connection (P.6-6), please purchase the daisy chain connection cable (STP-C001A) separately.

1-2-2 Additional Software

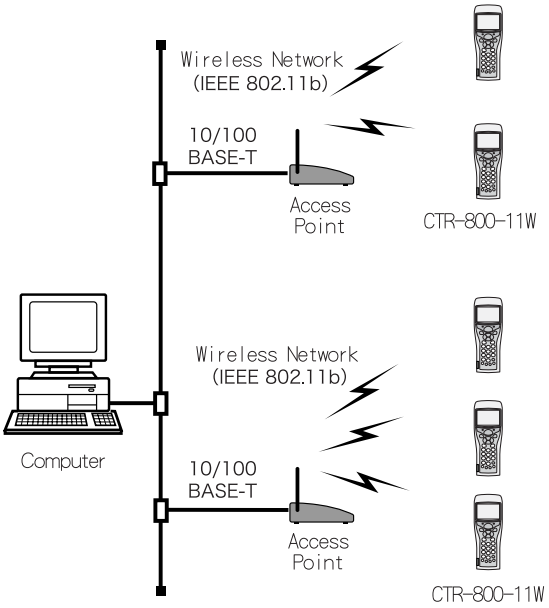
In the case where you want to create a system for data communication between the CTR-800-11W and a host computer or build a system using the CTR-800 browser, the following software is required.

Program	Preparation and use	Reference
WebGlider	The WebGlider software is required when building a Web based wireless system using the CTR-800 browser. The WebGlider package also includes a DHCP server, an FTP server, and an operation monitor etc. to help automate the CTR-800-11W setup. Please purchase separately if needed. Please install the "WebGlider" package on a computer and setup the communication environment, before performing data communication between the computer and the CTR-800 browser.	For details, please read the on-line manual included with this software.
Handy5250	The Handy 5250 software is required when creating a system to connect to an AS/400 host via the 5250 emulation environment. Before using, install the Handy 5250 setup utility which will allow the setup of the communication environment.	For details, please read the on-line manual included with this software.
Welfer Ⅱ for Windows	Welfer II is required for serial data transmission and reception with the host computer. Please purchase separately. Install "Welfer II for Windows" on the host computer before performing data communication.	Please refer to the included software manual.

1-3 Wireless Communications

■ Wireless function of the CTR-800 series

The CTR-800 series is a handy terminal network system incorporating a wireless communication system. The barcode terminal is small, lightweight and excels in portability. It is also suitable for moving around the work place, operating remotely from the computer while collecting barcode data. The CRT-800-11's wireless communication system is based on and conforms to the WLAN standard, IEEE802.11b. The maximum possible wireless transmission speed is approximately 11Mbps(es). Transmission and reception of scanned barcode data or files can be performed in real time through the wireless network.



■The Wireless Communication System

The wireless communication system is based on the IEEE802.11b standard, which is generally used in Wireless Local Area Networks (WLAN). In almost all cases, wireless communication can be performed if the access point used is based on the IEEE802.11b standard.

As for this product, only the infrastructure mode is supported. It does not support ad hoc mode.

■The role of an access point

An access point provides a wireless service area to a terminal (CTR-800-11W) and acts as a local bridge, which performs packet transmission between the cabled LAN and wireless network.
Each terminal has a unique IP address, which allows direct Ethernet LAN connection through an access point. This allows TCP/IP communication between the computer and the terminal.

Our recommended access points should be used. For information on manufactures and part numbers of the recommended access points, refer to our catalog or contact our sales department.

1-4 Preparation for Data Communication

For data communication between a computer and the CTR-800-11W, perform the following setup.

■ Wireless communications

	Item	Description	Reference page
1	SSID Setup	Set the SSID (or ESSID) of the CTR-800-11W to the same as that of the access point. CTR-800-11W includes an AP search function that will acquire and set up the SSID of an available access point.	P.4-17
2	Security Setup	Make the security settings to the same as the access point.	P.4-18
3	TCP/IP Setup	Set the TCP/IP address to allow communication with a computer via the Ethernet LAN.	P.4-22
4	FTP Setup	Make the FTP settings to allow wireless file transfer. The FTP settings corresponds to the "WebGlider" FTP server or general FTP server settings.	P.4-24
5	DHCP Setup	Make the DHCP settings when using the DHCP client function. This corresponds to the "WebGlider" DHCP server.	P.4-23
6	DNS Setup	Make the DNS settings in the case where the DNS is used for name resolution. Whether or not the DNS is used depends on the application.	P.4-24

Using the computer side DHCP client function (P.4-23), can all be configured at the same time.
When you use the DHCP client function, "WebGlider" is required.

Since setting the "1. SSID Setup" and "2. Security Setup" using the DHCP client function creates a security weak point, please do not use this function whenever possible.

Once setup is completed, first perform a wireless test (P.4-43) to see if the terminal can communicate with an access point. Then perform a ping test (P.4-45) to see if network communication between the terminal and computer can be performed.

For information about the CTR-800-11W wireless functions, please refer to "1-3 Wireless Communications" (P.1-7).

■Cable communications

	Item	Description	Reference page
1	Terminal ID Setup	Set a unique ID number to each CTR-800-11W. "Welfer II for Windows" and "WebGlider" use this ID to identify a terminal.	P.4-29
2	Serial Communication Setup	Set the serial communication conditions and the communication port (IrDA/RS-232C). Setup "Welfer II for Windows" and the terminal to have the same communication condition setup.	P.4-8

Using the computer side DHCP client function (P.4-23), can be configured at the same time.
When you use the DHCP client function, "WebGlider" is required.

1-5 Data-Communication Method

Once the equipment has been setup, data communication can be performed using the following procedures.

■In the case of wireless communications

The procedure for performing wireless communications is as follows.

When you use the DHCP function (P.4-23), "WebGlider" is required.
Once setup is completed, first perform a wireless test to see if the terminal can communicate with an access point. Then perform a ping test to see if network communication between the terminal and computer can be performed.

Operational Procedure

1. Connect the access point to the Ethernet LAN, then setup the access point so that it can communicate with a host computer.

Please refer to the access point manual included with your access point for details about the access point setup, Ethernet LAN connections and communications setup.

2. Turn ON the access point.
3. Turn ON the CTR-800-11W and setup the Wireless communications and TCP/IP from the System Menu. (P.4-16)
4. Setup FTP to transmit and receive a file.
   - •See P.4-31 for transmitting a file to a host computer from the CTR-800-11W.
   - •See P.4-33 for receiving a file from a host computer to the CTR-800-11W.

■In the case of cable communications

The procedure for performing RS-232C communication or IrDA communication is as follows.

Operational Procedure

1. Start the host computer in which "Welfer II for Windows" is installed.
2. After connecting the communication cradle (HIF-51) to the host computer using a HIF-51 PC connection cable (WRS-AXC003A), turn ON the communication cradle.
   When connecting the CTR-800-11W to a host computer directly, use the PC connection cable (HOP-C031).
3. Start "Welfer II for Windows" and setup the file transmission and reception.
4. Turn ON the CTR-800-11W and setup the Terminal ID (P.4-29) and serial communication (P.4-8) from the System Menu.

When using the communication cradle (HIF-51) via a daisy chain connection, you can transmit one file to two or more terminals at a time from a host computer (broadcast transmission). (P.6-6)
Moreover, in the case where two or more communication cradle s are connected via a daisy chain connection, it is possible to transmit data to a host computer from any unit.

5. Transmit and receive a file.
   • See P.4-31 for transmitting a file to a host computer from the CTR-800-11W.
   • See P.4-33 for receiving a file from a host computer to the CTR-800-11W.

Chapter 2

Hardware

2-1 Main Features of the CTR-800-11W

1. Ability to implement a cordless communication system

If a terminal is within a service area, the terminal can roam around and communicate via a wireless transmission system. Moreover, when you need to extend the system in the future, you can add terminals with ease.

2. Support of TCP/IP protocol

The Wireless Communications comply with the TCP/IP protocol, therefore a terminal can communicate with the computer via a cabled LAN transparently.

3. High-speed data transmission

The CTR-800-11W is based on the IEEE802.11b standard and can transmit 11Mbps over wireless communication, which is the maximum set in this standard.

4. IrDA Interface incorporated

The CTR-800-11W is based on the IrDA SIR Ver1.2 standard and achieves a high-speed file transfer of 115kbps. It can also communicate with an exclusive printer via IrDA.

5. Vibrator function incorporated as standard

The incorporated vibrator function lets you know that a scan has completed successfully even while you are in a noisy work area.

6. Use of large capacity battery for extended run time

By using the optional battery pack (HBC-51), it is possible to get 10 hours of continuous use.

Refer to "2-2-1 Product Specifications" (P.2-3) for the setup of the access point and CTR-800-11W.

7. Compact and lightweight

The product allows you to carry it easily and use it anywhere within the operating environment.

2-2 Product Specifications

2-2-1 Product Specifications

Scanner	Codes scanned	NW-7, CODE39, JAN-13/8, UPC-A/E, EAN 13/8, Industrial 2of5, ITF, CODE93, CODE128, and EAN128
	Number digits scanned	Max. 72 Digits (data digits)
	Scanning width	Max. 350mm
	Light source	Red light semiconductor laser
	MRD	25
	Resolution	0.127mm
Memory	FROM	4Mbytes (including 3.2MB for file area)
	SRAM	4Mbytes (including 2MB for file area and 1MB for Application Work area)
Display LED	Scan success / error	Green / Red / Orange
	Warning	Red (which illuminates when out of range)
LCD display	STN Liquid crystal full dot matrix (gray mode)	
	Display Size 128x64 dots	Kanji characters: 10 characters x 5 lines (12-dot mode)/ 8 characters x 4 lines (16-dot mode)
		ANK: 20 characters x 5 lines (12-dot mode)/ 16 characters x 4 lines (16-dot mode)
	Display area	43(W) x 31(H) mm
	Display characters	JIS level-1 kanji set, JIS level-2 kanji set, ANK, symbols, external characters.
	Contrast adjustment	8 levels
	Backlight	Yes (LED)
Buzzer	Sounds when an error occurs while reading a barcode	
Vibrator	Vibrates when a barcode has been scanned successfully and when an error has occurred (operation in synch with the buzzer can be selected).	
Dimensions	56.6(W) x160(D) x 37.9(H) mm / grip: 45(W) x26(H) mm	
Weight	Approximately 193g (including the battery pack)	
Power source	Main battery	Lithium ion battery
	Backup battery	Lithium secondary battery (maintenance-free)
Operating environment	Working temperature	-5 to 45℃
	Working humidity	20-80%RH (devoid of condensation)
	Storage temperature	-10 to 60℃
	Storage humidity	10-90%RH (devoid of condensation)
	Drip-proof	JIS II type
	Drop impact proof	120cm (onto concrete)
	Illumination conditions	Artificial light: 4,800 lx typ. (excluding sodium lamps) Sunlight: 107,000 lx typ.
Continuous operation time	Approximately 10 hours	
	Setup conditions ●Access point setup Beacon cycle: 100msec, DTIM: 2 ●CTR-800-11W Conditions Power-saving timeout: immediate; scan cycle: one scan per20 sec.; wireless transmission and reception of 100-bytedata after successful scan	
Clock function	Year (4 digits)/Month/Date/Hour/Minute, with automatic leap year compensation	
External interface	IrDA（compliant with the IrDA SIR 1.2 Low Power Option Standard） / RS-232C	

Wireless	International standards	IEEE802.11b
	Domestic standards	ARIB STD-T66、STD-33A
	Communication system	Spread Spectrum system (Direct Spread system)
	Wireless frequency	2.4GHz band
	Antenna power output	Less than 10mW/MHz
	Transmission speed	11/5.5/2/1 Mbps (switched automatically / fixed)
	Number of channels	14
	Security	SSID、WEP (40/128bit)
	Antenna	built in the body
	Transmission range	indoors: approximately 75m: outdoors: approximately 200m
Management function	SNMP agent (SNMPv1)	
MIB Support	MIB-II (RFC1213) *Partially not supported Welcat Enterprise MIB	

■ Display of alarm LED during wireless communications

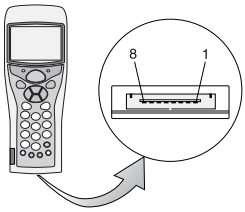
The state and meaning of the alarm LED during wireless communications are as follows.

LED state	Meaning
OFF	Communication with an access point is possible. Or no communication is currently taking place.
Blinking / ON	Communication with an access point has been attempted but synchronization with the access point cannot be achieved. When the barcode scanner goes out of sync with the access point, the LED will blink for approximately 3 seconds and will turn on. (The LED will turn OFF when the barcode scanner syncs with the access point again.)

2-2-2 RS-232C Interface

■Signal names and connector pin layout

Pin number	Terminal name	Direction	Description
2	GND	-	Signal ground
3	TxD	Output	Transmit data
4	RTS	Output	Send request
5	RxD	Input	Receive data
6	CTS	Input	Transmission possible
1, 7, 8	-	-	Reserved



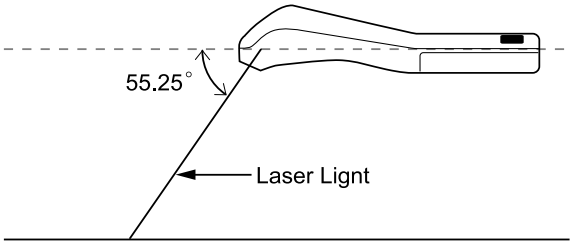
Connector type: 3260-8S2 made by Hirose,
Terminal signal level: JISX5101 equivalent

The reserved pins mentioned above have already been reserved by the system. Please do not use applications, cables etc. other than those recommended for use with the CTR-800-11W.
In order to carry out direct file transfer between the CTR-800-11W and the host computer, please purchase the PC connection cable (HOP-C031) separately.

2-2-3 Scanning Specifications

■Laser light irradiation angle

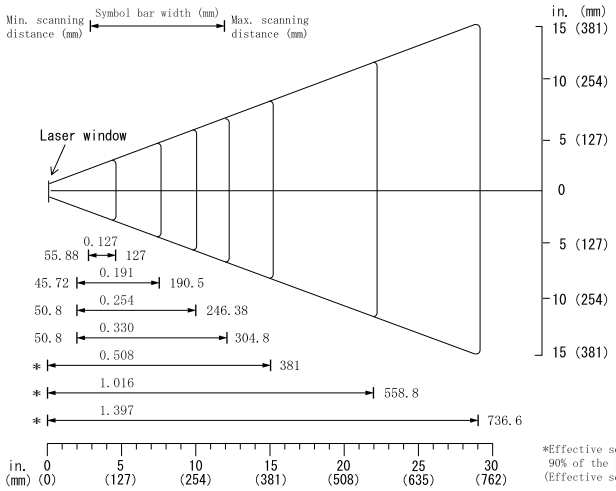
The angle of the laser light irradiated from the CTR-800-11W is 55.25 degrees.



■Scanning Depth

The range across which a barcode can be scanned is called a "scanning depth." The scanning depth for the CTR-800-11W is as shown in the figure below.

●Scanning range and resolution depth



*Effective scan width is approximately 90% of the laser scan width.
(Effective scan width = tan26.5° ×Distance×1.8)

●Scanning distance range

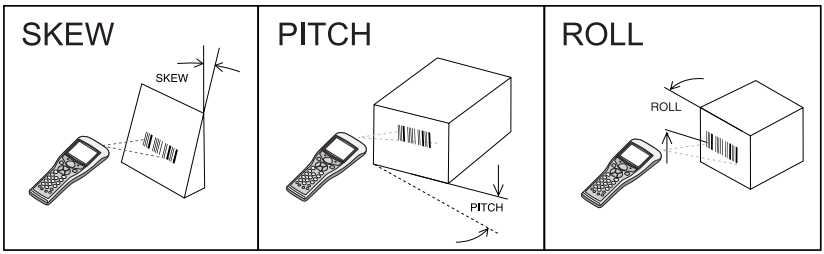
Symbol Type	(mm)	Contents	Wide/ narrow ratio	Min. scanning distance(mm)	Max. scanning distance (mm)
CODE 39	0.127	ABCDEFGH	2.5:1	55.88	127
CODE 39	0.191	ABCDEF	2.5:1	45.72	190.5
CODE 39	0.254	FGH	2.2:1	50.8	246.38
UPC100%	0.330	012345678905	-	50.8	304.8
CODE 39	0.508	123	2.2:1	*	381
CODE 39	1.016	AB	2.2:1	*	558.8
CODE 39	1.397	CD	2.2:1	*	736.6

－Table Supplementary Information－

- Distances in the items marked with * change with the barcode length.
- The scanning distance represents the horizontal distance from the end face of the outgoing port for the laser beams to the barcode, measured at a height of 4.3 mm from the bottom face of the chassis when the chassis is placed horizontally.
- The barcodes are photographic quality symbols, with over 90% white reflectance and 90% MRD (650nm).
- 4 triggers should result in 3 or more successful scans.
- The measurements were taken under the following conditions: pitch = 15°; skew = 0°; roll = 0° light circumference < 1600lx; normal temperature; normal humidity; under a glow lamp fluorescent light

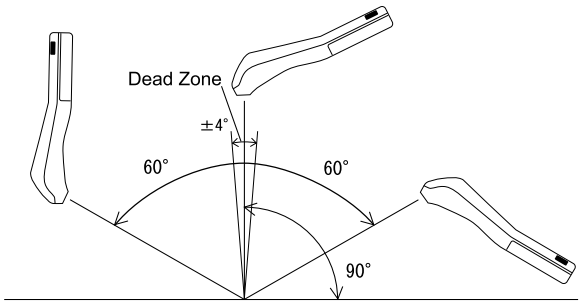
■Inclination of a barcode and the angle with which it can be read

The following are the three kinds of a barcode inclination.



●Skew

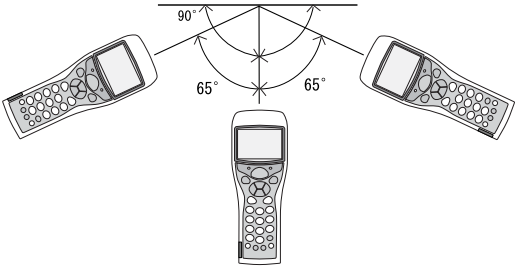
With a distance of 254mm, and a resolution of 0.508mm, scanning is possible up to 60° perpendicular to the upper and lower sides of a barcode.



The range of ±4° around a vertical line from the front face of a bar code is the "Dead Zone" caused by the specular reflection; scanning may become poor within this range.
Change the angle if you cannot read the barcode and scan it again.

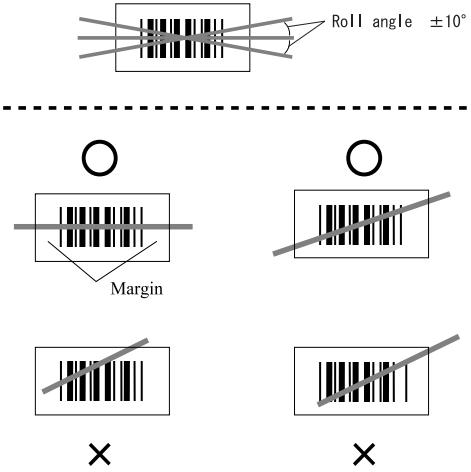
●Pitch

With a distance of 177.8mm and a resolution of 0.508mm, scanning is possible up to 65° perpendicular to the right and left of a barcode.



●Roll

With a distance of 254mm and a resolution of 0.508mm, the roll is the angle with which the laser light irradiates the barcode.



The laser light should always cross the whole label. Make sure it also irradiates the unfilled space (margin) to the right and left of the barcode.

2-3 Battery Pack (HBC-51)

The battery pack is not included with the CTR-800-11W. Please purchase separately and use it correctly.

Be sure to follow the precautions below when handling the battery pack.

- After purchasing, be sure to fully charge the battery pack before using.
- Be sure to shut off the power before removing the battery pack. If the battery pack is removed during operation, the program and data may be corrupted.
- Be sure not to touch the electrodes with your hand, and avoid dust on the electrodes. Otherwise this may cause poor contact with the battery pack and the CTR-800-11W. When dirty, wipe clean with a dry soft cloth etc.
- When installing and removing the battery pack, use a desk or other appropriate surface as the working table so that it cannot fall onto you feet.
- Be sure to attach the battery cover before use.

2-3-1 Charging the Battery Pack

Use our dedicated charger (HQC-51/HQC-54) to charge the battery pack. Charging will be completed in approximately 2.5 hours.

Please purchase the dedicated charger (HQC-51/HQC-54) separately.
For details, please read the instruction manual included with the dedicated charger.

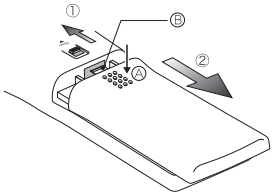
2-3-2 Removing the Battery Pack

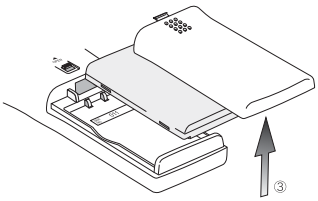
Release the lock by pulling up the lock lever in the direction (1). When the lock is released, the red indication of a lock lever will disappear.

Slide the battery cover in the direction (2). If the battery cover is hard to remove, hold down at point A shown in the illustration then slide in the direction of the arrow.

Slide the battery cover in the direction (2) until the tab (point B in the illustration) of the battery cover is completely exposed.

Remove the battery cover straight up as shown in the direction (3), and take out the inner battery pack.





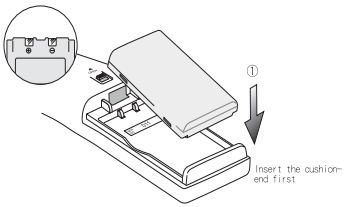
If the battery cover is removed on an angle or otherwise handled incorrectly, the battery cover and/or the main body may be damaged.

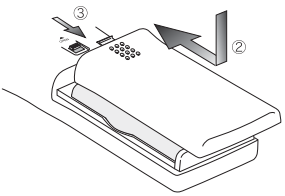
2-3-3 Installing the Battery Pack

Remove the battery cover, then position the electrodes of the battery pack above the electrodes of the main body, and then insert the battery pack as shown in (1).

Attach the battery cover by sliding in the direction (2).

Check and make sure that the tab of the battery cover has been completely inserted in the main body, and then return the lock lever in the direction (3). Please check that it is completely locked and that the battery cover can not come off. If locked, the lock lever indication will appear as red.





2-3-4 Replacing the Worn out Battery Pack

A battery pack is an expendable item. Even if the battery pack is used correctly, it will deteriorate gradually in the course of being charged and discharged repeatedly.
If the usage time is becoming shorter even after charging for the specified charging time, please replace the existing battery pack with a new one.

■About prolonged storage

Since the battery may deteriorate rapidly by over discharging if left for an extended period of time, be sure to periodically charge the battery. When you do not use it for an extended period of time, take note of the following.

- When you do not use it for one month or more, remove the battery pack and keep it at room temperature.

2-3-5 Cautions about Cleaning of Electrodes

When the operational time has become shorter or it is having trouble starting, poor contact between electrodes because of dirt, may be the cause instead of a degrading battery. If this is the case, cleaning both the battery electrodes and the main body electrodes will improve this condition.

■Methods for cleaning the electrodes

Please wipe the dirty electrodes with a clean dry soft cloth, a swab, etc. Never rub the electrodes with an unclean cloth, fingers or a hard object. Wipe the electrodes lightly, especially the main body electrodes, else they may get scratched or deformed.

2-4 Memory Backup Period (Battery for backup)

The memory backup period is approximately **three months**.

In addition to the battery pack, a backup battery is built into the CTR-800-11W for maintaining data saved on the S drive and the built-in clock of the CTR-800-11W.
The memory backup period is the period from when the backup battery was fully charged until it is completely discharged.

Battery	Battery pack	Backup Battery
	Optional	Built-in
Use	Required for operation of the CTR-800-11W	Maintains the data saved on the S Drive and the built-in clock of the CTR-800-11W.
Charging time	2.5 hours *Use the dedicated charger (HQC-51/HQC-54) (P.2-9)	To be fully charged, the backup battery takes approximately two days from when it starts the charging process as soon as a fully charged battery pack is installed in the CTR-800-11W. (P.2-13)
Estimated usable period (When fully Charged)	Approximately 10 hours. Refer to "2-2-1 Product Specifications" (P.2-3)	Approximately three months after the battery pack has fully discharged.
Precautions in Use	If the battery pack has not been recharged within three months or more, it may degenerate and become impossible to use. Ensure to charge it at least once within three months. (P.2-11)	If the CTR-800-11W is left with a fully discharged battery pack or left with the battery pack removed for three months or more, the backup battery will also fully discharge and then the built-in clock settings and the data saved on the S Drive will be lost. Ensure to charge the backup battery using a fully charged battery pack at least once within three months. (P.2-13)

Any data lost at the time when the backup battery is fully discharged cannot be restored. For data preservation, equip the CTR-800-11W with a fully charged battery pack, **and press the (PW) key to turn ON the CTR-800-11W**. This should be done at least once every three months. (Refer to "2-4-1 Charging the Backup Battery" (P.2-13)
The Memory backup time varies depending on the surrounding environment. For example, backup time will be drastically reduced in temperature below 0ºC and above 40ºC and more. It is recommended to use the battery at room temperature.

2-4-1 Charging the Backup Battery

This section describes the method for charging the backup battery.

Operational Procedure

1. Put the CTR-800-11W (with no battery pack installed) and one fully charged battery pack at a handy place.
2. Install the CTR-800-11W with the battery pack. (P.2-10)

The charging process does not start by only installing the battery pack.

3. Press the (PW) key and turn ON the power. The charging process for the backup battery will then be started.
   If the Backup Battery has completely been discharged, do not remove the battery pack for at least two days after the start of the charging process.
4. Once the charging process starts, even if the (PW) key is pressed and the power is turned OFF or the CTR-800-11W is used for normal operation (such as scanning barcodes), the charging process for the backup battery will continue until the battery pack is removed or totally discharged.
5. If the battery pack is fully discharged or removed during the charging process, the backup battery charging process will stop. To start the process again, repeat from step 1.

2-4-2 S Drive Data

The CTR-800-11W has two drives, the S Drive and the F Drive, where files can be saved.
The data entered by a user is saved in the S Drive. If the CTR-800-11W is left for an extended period of time without charging, the contents of the S Drive may be lost because the S Drive is volatile. The S Drives memory backup period is approximately three months at standard room temperature when fully charged.

Save the application program on the F Drive. The F Drive is a nonvolatile drive, therefore the contents will be preserved, even if the battery is fully discharged.
Refer to "3-1-1 Data Storage" (P.3-3) for details about storing data.

2-5 Suspend Function

The CTR-800-11W supports a suspend function. (P.4-15)
The suspend function can be enabled through the System Menu and if selected, the next time the (PW) key is pressed on the CTR-800-11W, the suspend function will be used.

Suspend mode ON	After the CTR-800-11W is powered OFF, the next time the (PW) key is pressed, it will suspend operation where it was just before the power was turned OFF.
Suspend mode OFF	After the CTR-800-11W is powered OFF, the next time the (PW) key is pressed, it will begin operation from the start.

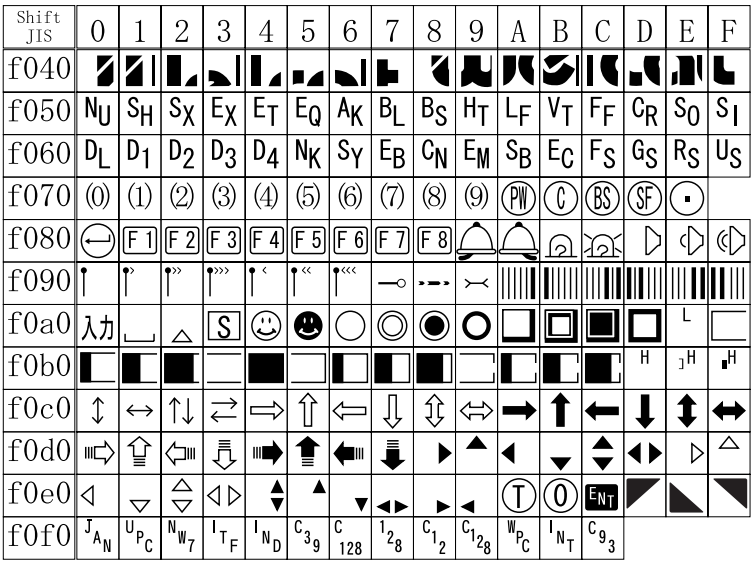
In the case where the battery is disconnected while the power is ON, the operation will begin from the start regardless of the suspend mode settings. If the DHCP has been set to "execute at startup," the program process will start from the beginning, regardless of the suspend mode settings.

In the case where the backup battery is fully discharged, the program will execute from the start, regardless of the suspend mode settings. Refer to "2-4-1 Charging the Backup Battery"(P.2-13) for information about charging the backup battery.

2-6 Screen Output Characters

■Double-byte characters

Shift JIS (OADG 2byte character set) is used for double-byte characters.
The first bytes of Shift JIS are located at 81-9F and E0-FC, and the second at 40-7E and 80-FC. The following table is an extended character list created by our company.



■Single-byte characters

The OADG single-byte character set is used for single-byte characters.
The five characters, 80, A0, FD, FE and FF, are extended characters created by our company.

上位 / 下位	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		╬		0	@	P	‘	p	▵		⌴	ー	タ	ミ		
1	╔		!	1	A	Q	a	q			。	ア	チ	ム		
2	╗	↕	”	2	B	R	b	r			「	イ	ツ	メ		
3	╚		#	3	C	S	c	s			」	ウ	テ	モ		
4	╝	▨	$	4	D	T	d	t			、	エ	ト	ヤ		
5	‖	═	%	5	E	U	e	u			・	オ	ナ	ユ		
6	═	╦	&	6	F	V	f	v			ヲ	カ	ニ	ヨ		
7	↓	╣	’	7	G	W	g	w			ァ	キ	ヌ	ラ		
8			(	8	H	X	h	x			ィ	ク	ネ	リ		
9	○	╠	)	9	I	Y	i	y			ゥ	ケ	ノ	ル		
A		▨	*	:	J	Z	j	z			ェ	コ	ハ	レ		
B	▩	↵	+	;	K	[	k	{			ォ	サ	ヒ	ロ		
C		↑	,	<	L	¥	l	|			ャ	シ	フ	ワ		
D		|	−	=	M	]	m	}			ュ	ス	ヘ	ン		S
E	■	→	.	>	N	^□	n	￣			ョ	セ	ホ	゛		入
F	☼	←	/	?	O	_	o				ッ	ソ	マ	゜		力

Chapter 3

Software

3-1 CTR-800-11W Software

The CTR-800-11W software consists of the following two types.

System program	Controls the basic operation of the CTR-800-11W. It is equivalent to an OS (operating system) of a personal computer, and is preinstalled in the CTR-800-11W. The System Menu, which sets the basic parameters for operation and performs various verifications, is a part of the system program.
Application program	Used for user operations processing. This program is mainly used for scanning barcodes, data transmission to a computer, etc. In the case that "WebGlider" is used to configure the system, the "CTR-800 browser (WEB811.OUT)" has been loaded on the CTR-800-11W. If you purchase "WebGlider," you can easily combine it with the CTR-800 browser to build a Web based system. The optional application development kit allows you to create original programs to meet a wide range of business needs.

Refer to "4-2 System Menu" (P.4-3) for detailed information about the System Menu.
For information about "WebGlider," see the online manual included with the product package.

3-1-1 Data Storage

■Information about the data storage (drive configuration)

The CTR-800-11W has two drives for storing data. The S Drive and the F Drive.

Drive	Data Retention	Use	Maximum Capacity
S Drive	●Volatile memory Once the backup battery is discharged the contents of the drive will be lost.	Used to store files that are frequently written to.	32 files
F Drive	●Non-volatile memory The contents of this drive will be retained after the backup battery is discharged.	Used to store files that are not written to, such as application and the database master files.	50 files

When the F Drive receives a file, the S Drive receives the file first then moves it to the F Drive. In case where the F Drive receives a file, confirm that there is enough storage space on the S Drive beforehand.

Also, if a file with the same name exists in the S Drive, the file that was stored in the S Drive will be erased after moving the file to the F Drive.

■File Naming

The file names used by the CTR-800-11W are subject to the following restrictions.

File name	A file name can be 1 to 8 byte long, in any combination consisting of alphabet (A-Z), numbers (0-9), and/or symbols (!#%&'()@^_{} -). Double-byte characters cannot be used.
Extension	Specify an extension using 1 to 3 bytes of characters. The extension can be omitted. The characters that can be used are the same as the characters for the file name. When specifying an extension a ."" is needed between the file name and the extension. The file with an extension of ."OUT" is recognized as an application file. The file with an extension of ."FNV" is recognized as a font file.

■The files generated by the CTR-800 Browser

In the case where the CTR-800 browser is being used for HTTP communication, the following files are created in the S Drive. Since a file with the same name is overwritten, be sure to use a different name than the following file names.

- HTTP.LOG
- HTTPTEMP (with no extension)
- HEADTEMP (with no extension)

Since these files are going to be created, the actual number of files you can store on the S Drive is 29.

When the above-mentioned files cannot be created because there are too many files or there is no available space on the S Drive, the CTR-800 browser will be unable to operate normally.

3-1-2 System Menu

Through the System Menu, you can make the CTR-800-11W fundamental operation settings, install the application program and transmit data files, etc.

Refer to "4-2 System Menu" (P. 4-3) for details about the System Menu.

3-1-3 CTR-800 Browser

The CTR-800-11W dedicated browser (WEB811.OUT) is preinstalled in the CTR-800-11W before shipment. This application is used in combination with "WebGlider" to build a Web based system.
For information about how to implement the application process, refer to the included on-line manual for "WebGlider."
When developing unique applications using either the application development kit HAP-SDK -11 or the model-specific CTR-800-11W library HAP-LIB-82, or when using the emulator software "Handy5250," the CTR-800 browser is not required and can be deleted.

Chapter 4

Setup

4-1 Introduction

The CTR-800-11W's System Menu can be used for various tasks such as network communication setup, operation setup, the installation of application programs, data file transmission and verification checks, etc.

■System Menu

The System Menu is a part of the system program (P.3-2), which is preinstalled in the CTR-800-11W as one of the functions that comprise the operating system. It also provides a platform for installing application programs and performing environmental setup for the whole system.
This chapter describes how to set up the CTR-800-11W and perform various verification checks, with primary focus on how to use the "System Menu."

4-2 System Menu

4-2-1 System Menu Operations

The following keys are used for operating the System Menu.

C	Used to return to the previous menu.
1 ~ 9	Used to select the corresponding menu item.
ENT	Used to confirm the selected menu item.
F4	Turns on the back light.
F5 (←) F6 (↑) F7 (↓) F8 (→)	Used to move the cursor (selected area) in the direction of the arrow.

■Operation method

●Selecting a Menu Item

Either press a number key on the numeric keypad (1 ~ 9) which corresponds to the number shown on the left of the menu item, or move the cursor in any direction using the keys F5 ~ F8. When the cursor moves onto a menu item, it becomes highlighted (colors reversed = selected). To select the current highlighted item, press the ENT key. This will execute the selected menu item's function or display the next sub-menu.

```
< System Menu >

1:System   4:File
2:Network  5:Status
3:TermID   6:Test
```

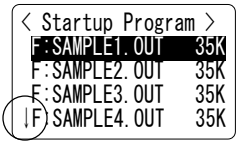
●Returning to the previous menu

To return to the previous menu, press the C key. Once you have returned to the previous menu, the menu item that was previously selected is highlighted (colors reversed).

■About the screen display

Depending on the menu (screen) displayed, the characters "F:~" or "S:~" may be displayed on the left-hand side of an item. If these characters are displayed on the left-hand side of an item, they represent the following: "F" = "F Drive" and "S" = "S Drive."

When all of the menu items cannot be displayed in one screen, [↑] (when menu items are hidden above the screen) or [↓] (when menu items are hidden below the screen) is displayed on the left-hand side of a screen. If the cursor is moved to a hidden menu item, the screen will scroll automatically.



■Setting the IP address, etc.

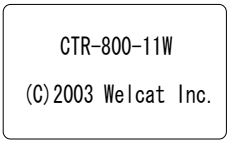
The IP address etc, is set in form of "000.000.000.000." When you change a value, move the cursor to the part you want to change, and overwrite with the new value.
The Ⓒ key and the Ⓑ key cannot be used to modify the values.
If entering values less than 3 digits in length, the remaining digits have to be 0, for example "001."

4-3 Starting the System Menu

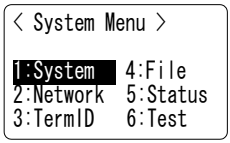
4-3-1 How to Start the System Menu

Operational Procedure

1. Once the CTR-800-11W has been correctly installed with a battery pack and if the current state is OFF, press the (PW) key for approximately 1 second. The power will turn ON and the System Menu will be started.
2. The System Menu is displayed immediately after the opening screen.

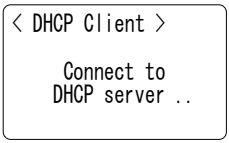


If an application is set for "Startup" (P.4-7), hold down the scan key and then press the (PW) key to start the System Menu.



4-3-2 Executing a DHCP Request

If the network DHCP setup (P.4-23) is set as "Run at startup", a DHCP request is executed immediately after the CTR-800-11W starts.



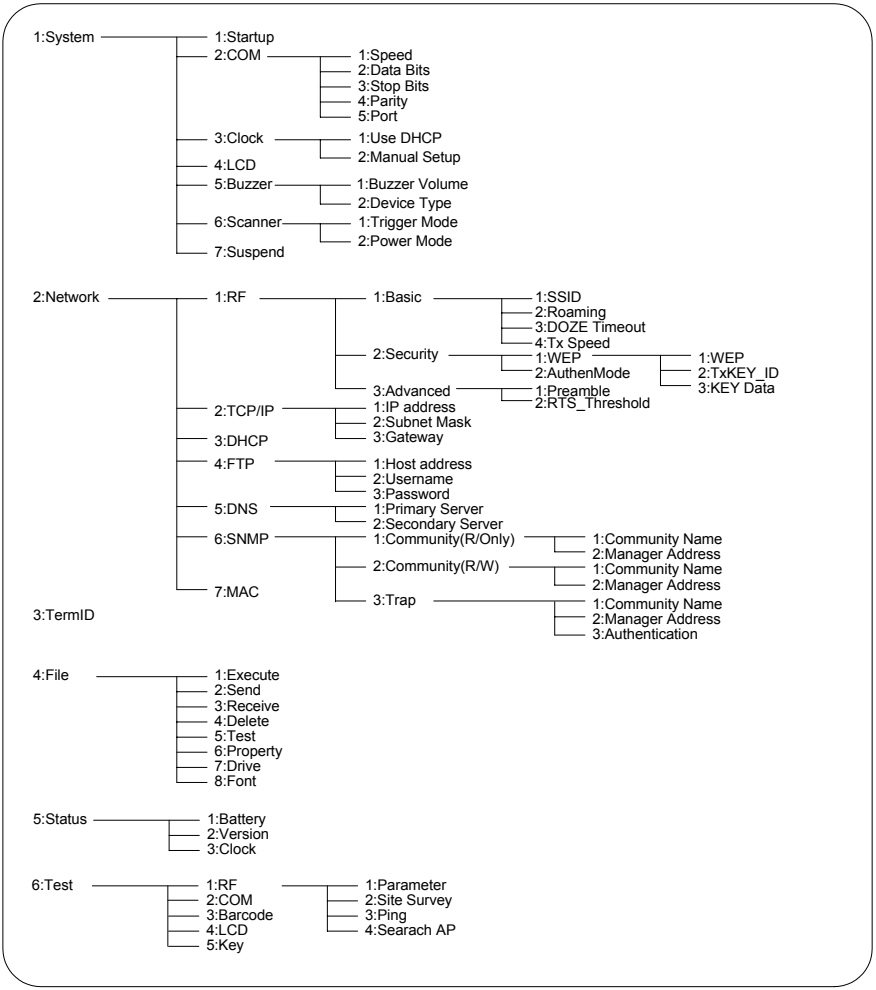
If the system is in the state where wireless communications with an access point is possible and if the DHCP server and FTP server of the "WebGlider" network management tool have been started, the various environmental setting values and specified files will be downloaded to the CTR-800-11W and automatic setup will be performed via the TCP/IP network.

After the DHCP request has been executed, the applications set for "Automatic Launch," if any, will start. (P.4-7)

4-3-3 Starting State for Wireless Operation

Immediately after starting, the CTR-800-11W's wireless communication unit is set to a suspended state. If the wireless communications related menu is selected immediately after starting, the CTR-800-11W will be ready for communication within 0.5 to 1 second.

4-4 System Menu List



Please refer to the "System Menu Factory Settings" (Appendix A-2) for information about the System Menu factory settings.

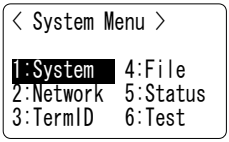
4-5 System Setup Menu

4-5-1 Setting the Programs for Automatic Launch

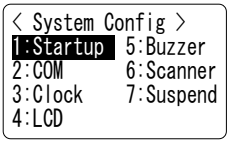
You can set programs to launch automatically when the power is turned ON. In the factory settings, the System Menu is set to launch automatically.
When the DHCP function (P.4-23) is enabled, these settings can be made automatically.

Operational Procedure

1. From the System Menu, select "1:System."

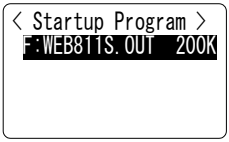


2. Then select "1:Startup."



3. Select "1:System Menu" or "2: User Program." The current program names are displayed on the bottom line.

4. If "1:System Menu" is selected, the System Menu will be set to launch automatically immediately after the power is turned ON.
   If "2:User Program" is selected, a list of currently installed applications is displayed. From this list, select an application.



5. Once an application is selected, the name of the application will be displayed on the bottom line of the screen.

■When no application is stored

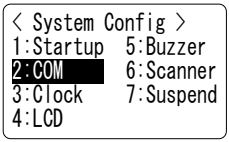
When there are no applications stored, the message "File not found" will be displayed. Press the Ⓒ key to go back to the previous screen.

4-5-2 Serial Communication Setup

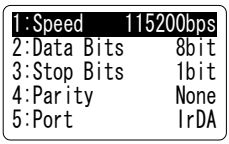
This section describes how to set up the serial port (RS-232C or IrDA) communication conditions. When the DHCP function (P.4-23) is enabled, these conditions can be set up automatically.

Operational Procedure

1. From the System Menu, select "1:System."



2. Then select "2:COM" to display the current communication setup.



Move the cursor to select each individual item. If desired, press the ENT key to change the current value. The following table shows each item and its range of settings.

Item	Possible Setting Range	Factory settings
1:Baud rate	2400bps・9600bps・19200bps・38400bps・57600bps・115200bps	115200bps
2:Data length	7 bits or 8 bits	8 bits
3:Stop bit length	1 bit or 2 bits	1 bits
4:Parity	Odd Parity, Even Parity or No Parity	No Parity
5:Port	IrDA (infrared data communication) or RS-232C	IrDA

4-5-3 Clock Setup

Reference the time on the host computer to set up the system time.
You can also set up the time manually. In the case where the DHCP function (P.4-23) is enabled, this setup can be made automatically.

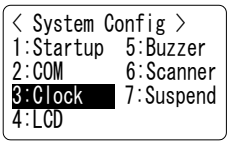
In order to receive the time from the host computer, please check the following in advance.

- Has the communication setup (SSID, WEP, etc.) been made correctly?
- Have the access point and the host computer been setup and connect correctly?
- Are the access point and the host computer turned on?
- Is the access point operating normally?

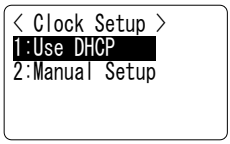
For detailed information on wireless network configuration, refer to the access point (our recommended item) manual included with the access point.

Operational Procedure

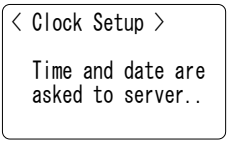
1. From the System Menu, select "1:System."
2. Then select "3:Clock."

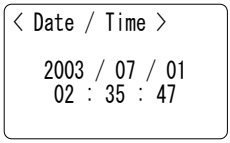


3. Then select either "1:Use DHCP" or "2: Manual setup."



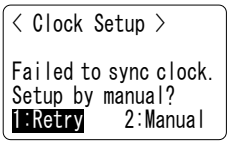
4. If "1:Use DHCP" is selected, the time data is received from the DHCP server of the "WebGlider" network management tool. Once completed, the time will be displayed.
   Press the ⓒ key to return back to the previous screen.



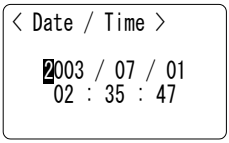


When setting up the clock via the "Server Setup", the DHCP server of the "WebGlider" network management tool must be running.

5. In the case where wireless communications has failed, the confirmation screen for manual setup will appear after several seconds.
   If you want to try to receive the time from the server again, select "1: Retry" then press the (ENT) key.
   To stop the clock setup, press the (C) key.



6. When manually entering the time, select "2:Manual" from either screen (3) or (5) to enter the time.
   Use the (F5) or (F8) keys to toggle through year, month, date, hour, minute and seconds, and enter the values using the numeric keys. Press the (ENT) key to confirm the values you have entered.
   To cancel manual entry and return the clock to its original value, press the (C) key.



Chap. 4

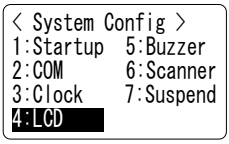
Refer to "4-9-3 Clock" (P.4-42) to check the time setting.

4-5-4 Adjusting the Screen Contrast

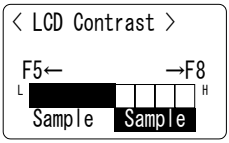
You can set the contrast of the liquid crystal display in 8 levels.

Operational Procedure

1. From the System Menu, select "1:System."
2. Then select "4:LCD."



3. Set the screen contrast as follows:
   Press the (F5) key to make the display one level lighter.
   Press the (F8) key is pressed, the display will become one level darker.
   Press the (ENT) key to confirm the setup and return to the previous screen.
   Press the (C) key to stop adjusting and return the level back to its original value.

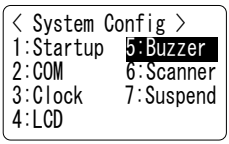


4-5-5 Buzzer and Vibrator Setup

You can set either the buzzer or the vibrator or both to notify a successful key entry or scan.

Operational Procedure

1. From the System Menu, select "1:System."
2. Then select "5:Buzzer."

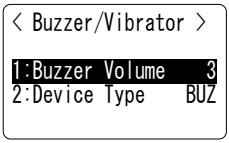


■Adjusting the buzzer volume

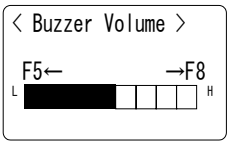
Set the volume of the buzzer in 8 levels.

Operational Procedure

1. Select "1:Buzzer Volume" to set the volume of the buzzer.



2. Set the volume of the buzzer as follows:
   Press the F5 key to reduce the volume by one level (the minimum level is 1).
   Press the F8 key to increase the volume by one level (the maximum level is 8).
   Press the ENT key to confirm the setup.
   If the value is set to ("1") by pressing the F5 key, the CTR-800-11W will become silent (the vibrator won't vibrate).
   Press the C key to stop adjusting and return the level back to its original value.

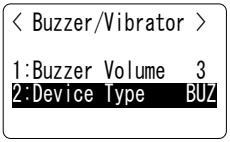


The vibrator vibrates at a constant frequency regardless of the volume setting for the buzzer (Levels 2 to 8).

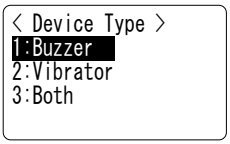
■Selecting a device

Operational Procedure

1. Select "2: Device Type" to toggle between the buzzer and the vibrator.



2. "1:Buzzer" = a beep sounds.
   "2:Vibrator" = the main body vibrates.
   "3:Both" = a beep sounds and the main body vibrates.

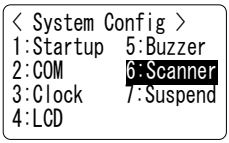


4-5-6 Scanner Setup

Set up the operating conditions for the laser scanner while the application program is running.

Operational Procedure

1. From the System Menu, select "1:System."
2. Then select "6:Scanner."

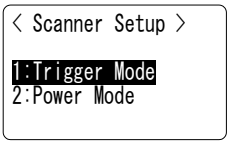


■Setting the trigger mode

Set the mode in which the scanning key operates.

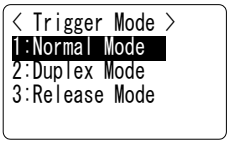
Operational Procedure

1. Select "1:Trigger Mode."



●Normal Mode

When the scan key is pressed, the laser turns on and scanning can be performed anytime.



●Duplex Mode

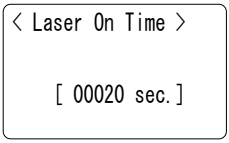
When the scan key is pressed, the laser will flash. If the scan key is pressed again, the laser will turn on and scanning will start.

●Release Mode

When the scan key is pressed, the laser will flash. If the scan key is then released, the light will turn on and scanning will start.

■Setting the laser irradiation time

After setting the trigger mode, set the laser irradiation time.
Set the value in the range between 0 and 65536 seconds.
The laser is turned off when a barcode is not scanned successfully within the specified time.
The laser remains on when this value is set to 0 seconds.

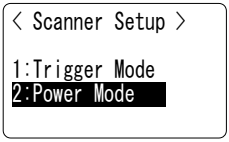


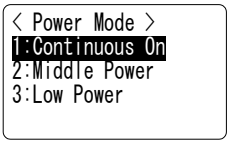
■Setting the power save mode

You can save the battery power by setting the CTR-800-11W to the battery save mode, as described below.

Operational Procedure

1. Select "2: Power Mode."





●Continuous On

The power save mode is not used.

●Middle Power

If a barcode is successfully scanned, the laser will turn off automatically. Since the power supply to the scanner part is still on, the next time you scan a barcode, the startup time will be shorter than during the full save mode.

●Low Power

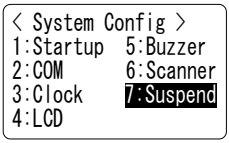
If a barcode is successfully scanned, the power to the scanning part will be turned off. The next time you scan a barcode, the startup time will be longer than during the quick save mode.

4-5-7 Suspend Mode Setup

This section describes how to set up the suspend function.

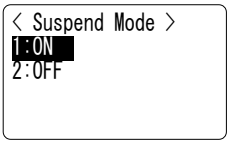
Operational Procedure

1. From the System Menu, select "1:System."
2. Then select "7:Suspend."

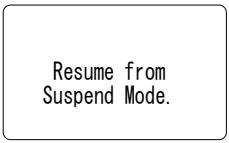


●Suspend ON

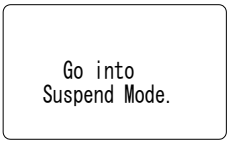
After the CTR-800-11W's power is off, and the next time the (PW) key is pressed to start it, it will resume processing from where it was when the power was last turned off.



The screen shown right will be displayed when the CTR-800-11W is started with the suspend mode enabled. (If the (PW) key is pressed while the scan key is being pressed, the suspend mode will be canceled and the restart process will be executed from the beginning).



Just before the power is turned OFF with the suspend mode enabled, the screen shown right is displayed. (Before removing the battery pack, wait for about 3 seconds after the screen (shown right) has disappeared).



Please do not remove a battery pack by any means when these screens are displayed. If a battery pack is removed at this time, it may become impossible to start.

●Suspend OFF

After the CTR-800-11W's power is OFF, the next time the (PW) key is pressed, it will begin processing from the beginning.

The resume function is effective when turning OFF/ON the power using the (PW) key. If the battery pack is removed during operation, the restart process will be executed from the beginning regardless of the resume function setup. Even if the power is OFF and the battery pack is removed, the restart process will be executed from the beginning when the DHCP settings are set to "Execute at startup."

4-6 Network Menu

This section describes how to set up the CTR-800-11W wireless and TCP/IP communications.

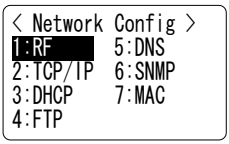
4-6-1 Wireless Communications Setup

This section describes how to set up the CTR-800-11W for wireless communications with an access point.

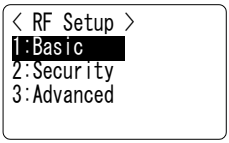
4-6-1-1 Operation Setup

Operational Procedure

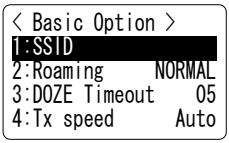
1. From the "System Menu, select "2:Network."
2. Then select "1:RF."



3. Then select "1:Basic."



4. Select the item you want to setup, then press the (ENT) key. If you have entered a new value, press the (ENT) key to confirm the value.



When setting the SSID, if the (SF) key is pressed, alphabetic characters can be entered.
If the trigger key is pressed, the setup can be done by scanning a barcode.

■SSID Setup

Note the following when setting the SSID. The SSID can incorporate up to 32 characters consisting of single byte alphanumeric character and symbol. The characters are case sensitive. Automatic setup is possible when the DHCP function (P.4-23) s enabled. However, since use of the DHCP function creates a security weak point, please do not use it whenever possible (refer to P.4-18 for SSID details).

■Roaming level

When a terminal moves around, this function will select an access point depending on the strength of the wireless signal and changes access points automatically. This is called roaming. The value which it is compared against when performing this change is the roaming level. Automatic setup is possible when the DHCP function (P.4-23) is enabled.
Roaming is only carried out between access points which have the same SSID.

Possible values	FAST, NORMAL, SLOW
	FAST(roaming is easy) ← NORMAL → SLOW (roaming is hard)

■DOZE timeout

This is the length of time until the wireless component changes to DOZE mode after transmission has finished. Automatic setup is possible when the DHCP function (P.4-23) is enabled. The shorter this time is, the longer the battery life will last, although the wireless response falls.
The response time to power-saving mode varies with the access point beacon intervals and the DTIM setup. Refer to the access point manual for details.

Possible Settings	Instantly, 1, 2, 3, 4, 5, 10 seconds, None

■Transmission speed

Set the Transmission speed. Automatic setup is possible when the DHCP function (P.4-23) is enabled. Any of the following can be selected.

Auto	Transmission speed is changed automatically.
1Mbps	Fixed Transmission speed of 1Mbps.
2Mbps	Fixed Transmission speed of 2Mbps.
1or2M	Transmission speed is automatically changed between only 1Mbps or 2Mbps.
5.5Mbps	Fixed Transmission speed of 5.5Mbps
11Mbps	Fixed Transmission speed of 11Mbps

●SSID (ESSID)

SSID is a unique identifier used to allow a terminal (CTR-800-11W) and an access point to communicate. Since a terminal can only communicate with an access point with the same SSID, the risk of a third person illegally accessing information is reduced a little. When the SSID of a terminal is set to "ANY" (or with no characters set), the terminal searches for any available access points automatically and tries to connect.

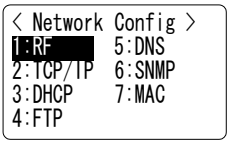
Some access point settings may refuse "ANY" settings on the terminal due to security reason. Refer to the access point manual for details.

You can set two or more access points to have the same SSID on the network. This allows roaming of a terminal only between the access points with the same SSID.

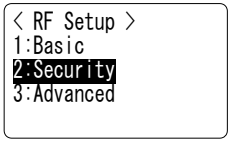
4-6-1-2 Security Setup

Operational Procedure

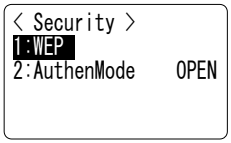
1. From the System Menu, select "2:Network."
2. Then select "1:RF."



3. Then select "2:Security."



4. Then press the ENT key.



■WEP (refer to P.4-20 for details)

WEP can be set to either "Null," "40 bits," or "128 bits."

```
〈 WEP 〉
1:WEP          Disable
2:TxKEY_ID       KEY1
3:KEY Data
```

●TxKEY_ID

Select the ID used for transmission from KEY1-KEY4 set in the next paragraph "KEY setup." This becomes effective if the WEP settings are set to other than "Null."

Communication is possible only if the contents of both the TxKEY_ID WEP key and the access point WEP key are the same, and if the contents of both the TransmitKEY WEP key set on the access point and the terminal's WEP key are the same.
For example, when the TxKEY_ID of a terminal is set to "2," the contents of the terminal WEP key 2 and the contents of the access point WEP key 2 need to be the same. On the other hand, when an access point TransmitKey is set to "3," the contents of the access point WEP key 3 and the contents of the terminal WEP key 3 need to be the same.

●KEY Setup

Setting the contents of each WEP key (1, 2, 3, 4).

Characters which can be used are "0" - "9", "A" - "F" and "a" - "f." When a 40 bits is selected for "WEP," the WEP is a fixed 10 characters. When 128 bits is selected, it is a fixed 26 characters. The number of characters that are actually input is always 26. Therefore, when 40 bits is selected, the first 10 characters of the 26 characters are applied. If a trigger key is pressed, the setup can be done by scanning a barcode.

Each WEP key setup can be overwritten but cannot be edited.
On entering the KEY setup screen, it displays "00000..." for security purposes.

■Authentication (refer to P.4-20 for details)

OPEN	Sets up an "Open Authentication" system.
SHARED	Sets up a "Shared Key Authentication" system.

```
〈 Authentication 〉
1:OPEN
2:SHARED
```

If the "Shared Key Authentication" system is used, there is a danger that the unencrypted and encrypted "challenge code" may be intercepted by a third person. If this happens, the WEP key can be easily detected. The "Shared Key Authentication" system thus creates a security weak point and should not be used whenever possible.

Some access points do not disclose their authentication type. In this case, please try "Open Authentication," and if connection is impossible, try "Shared Key Authentication."

●WEP (Wired Equivalent Privacy)

Since IEEE802.11b is a general wireless standard, it may be easily intercepted by a third person. The danger of data being intercepted between an access point and a terminal (CTR-800-11W) is avoidable by using WEP, which is the standard of encryption of wireless-communication. CTR-800-11W is compliant with two kinds of WEP keys (common key), "40 bits (also called 64 bits)" and "128 bits."

●Authentication

There are two kinds of authentication systems, "Open Authentication" and "Shared Key Authentication".

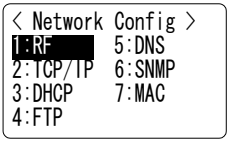
- "Open Authentication" system
  If an authentication request frame from a terminal (CTR-800-11W) is received, an access point will reply with an authentication response frame, which will permit data communications.
  When WEP is valid, authentication is possible but data communications cannot be performed if both WEP keys do not match.
- "Shared Key Authentication" system
  If a terminal performs an authentication request, an access point will transmit a non-encrypted identity request authentication text character string (hereinafter called as "challenge code"). Then, the terminal replies a challenge code encrypted using the WEP key. The access point decrypts the challenge code via the WEP key and checks to see if it is the same as the transmitted challenge code and if the same, permits authentication.

If the challenge code before and after encryption is intercepted by a third person, the WEP key is easily determined. The "Shared Key Authentication" system thus creates a security weak point and should not be used whenever possible.

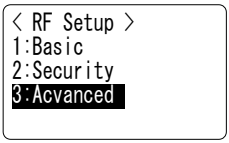
4-6-1-3 Detailed Setup

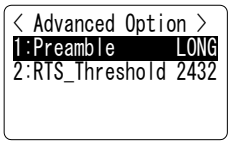
Operational Procedure

1. From the System Menu, select "2:Network."
2. Then select "1:RF."



3. Then select "3:Advanced."





■Preamble

Set the preamble.
The preamble is a data part located at head of a wireless packet. It contains the information that is required for wireless packet transmission and reception between an access point and a terminal. "Short preamble" improves the throughput more than "Long preamble."

LONG	Sets a Long preamble.
SHORT	Sets a Short preamble.

Some access points may not receive a Short preamble. In this case, please set it to a Long preamble. Refer to the access point manual for details.

■RTS Threshold

This determines whether an RTS packet is transmitted before transmission of a data packet. When the size of a data packet is larger than the set value, an RTS packet is transmitted, and RTS-CTS control is performed. When a large number of terminals are connected to the same access point, or terminals cannot detect each other because they are dispersed remotely even if detection of an access point is possible, RTS-CTS control becomes effective. Although RTS-CTS control is effective in this case, the throughput reduces. Usually set it to the default value (2432 bytes).

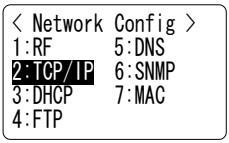
Possible Setting Range	Even value of between 0-3000 bytes (In the case of odd number, 1 is added)

4-6-2 TCP/IP Setup

Set an IP address and other details for TCP/IP communications. Automatic setup is possible when the DHCP function (P.4-23) is enabled.

Operational Procedure

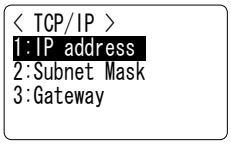
1. From the System Menu, select "2:Network."
2. Then select "2: TCP/IP."



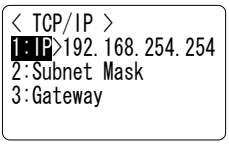
3. To set the value, select the item you want to set up, then press the ENT key. Then set the value which is divided into four fields by a period.

Possible Setting Range	0 - 255

Example) 192.168.254.254



4. Once the new value is set, press the ENT key to confirm the changes.



●IP address

Set the IP address assigned by the network administrator. Set a unique IP address to each of the CTR-800-11W terminals connected to the same network.

●Subnet mask

Set the subnet mask assigned by the network administrator. Since a subnet mask specifies which network you belong to, it should set up along with the IP address.

●Gateway

Set the address of the default gateway. Setup is required when connecting to a different network through a router.

Please ask the network administrator about the value settings for different items.

When "3:Run at startup" ("4-6-3 DHCP Setup" (P.4-23) s selected, it is only verified and impossible to change.

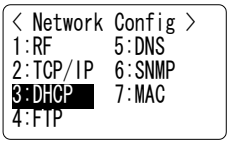
4-6-3 DHCP Setup

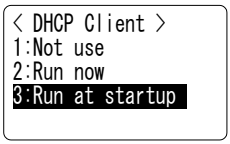
Set whether or not the DHCP client function is used for automatic setup of TCP/IP and various set items. Using the DHCP function, it is possible to download IP address, server address and program/data files to each CTR-800-11W and set them automatically.

> When you use the DHCP function, "WebGlider" is required.

Operational Procedure

1. From the System Menu, select "2:Network."
2. Then select "3: DHCP."





●Not use

The DHCP client function is not used, and all parameters are individually set up for every terminal.

●Run now

By pressing the ENT key, the DHCP request is executed, the value settings and files are downloaded automatically. The setup is automatic for the first time only. Select this if nothing needs to change during operation.

●Run at startup

When the CTR-800-11W is started, a DHCP request is performed and the value settings and files are downloaded automatically. If you reload programs, data files and IP addresses regularly, select this operation.

> Before selecting "Run now" and "Run at startup", please check that the "WebGlider" DHCP server is running.
> When "3:Run at startup" is selected via the DHCP setup, it becomes impossible to change the parameter which can be set via "4-6-2 TCP/IP Setup" (P.4-22).

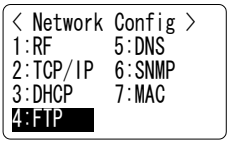
> Refer to the "WebGlider" on-line manual for details of setting items via DHCP.

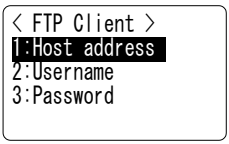
4-6-4 FTP Setup

Set up for using the FTP client function, as described below. Automatic setup is possible when the DHCP function (P.4-23) is enabled.

Operational Procedure

1. From the System Menu, select "2:Network."
2. Then select "4:FTP."





●Host address

Specify The IP address of the FTP server. Automatic setup is possible when the DHCP function (P.4-23) is enabled.

●User name

Specify the FTP server login user name using up to 18 alphanumeric characters. To enter alphabetic characters, press the (SF) key.

●Password

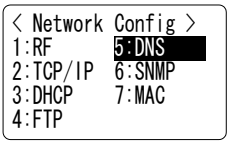
Specify the FTP server login password using up to 20 alphanumeric characters. To enter alphabetic characters, press the (SF) key.

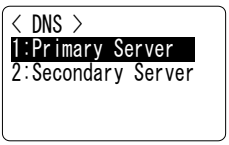
4-6-5 DNS Setup

DNS Set the DNS server address, as described below.
Automatic setup is possible when the DHCP function (P.4-23) is enabled.

Operational Procedure

1. From the System Menu, select "2:Network."
2. Then select "5:DNS."
3. Set the IP addresses for the primary server and secondary server respectively.



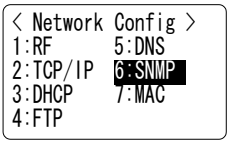


4-6-6 SNMP Setup

Make the various SNMP settings. Automatic setup is possible when the DHCP function (P.4-23) is enabled.

Operational Procedure

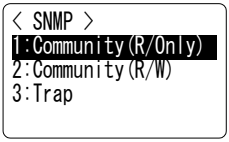
1. From the System Menu, select "2:Network."
2. Then select "6:SNMP."

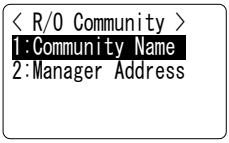


■Community (R/Only) Setup

Operational Procedure

1. From the System Menu, select "2:Network."
2. Then select "6:SNMP."
3. Then select "1:Community(R/Only)."





●Community name

The operations permitted for a community name are read only. GET and GET-NEXT requests are supported under a community name.
When a SET request is sent using a community name, an authentication trap is transmitted.
A community name can be specified using a maximum of 16 alphanumeric characters.

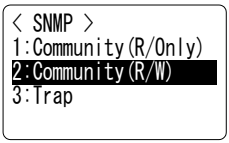
●Manager address

Set the SNMP manager's IP address, which permits the use of the community name set under the "Community name" option.
If "000.000.000.000" is set as the SNMP manager's IP address, this community name is permitted on all the SNMP managers.

■Community (R/W) Setup

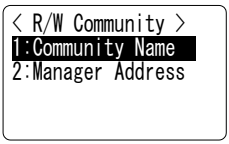
Operational Procedure

1. From the System Menu, select "2:Network."
2. Then select "6:SNMP."
3. Then select "2:Community (R/W)."



●Community name

The operations permitted for a community name are read/write. GET, GET-NEXT and SET requests are supported under a community name. A community name can be specified using a maximum of 16 alphanumeric characters.



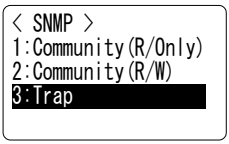
●Manager address

Set the SNMP manager's IP address, which permits the use of the community name set under the "Community name" option.
If "000.000.000.000" is set as the IP address, this community name is permitted on all the SNMP managers.

■Trap Setup

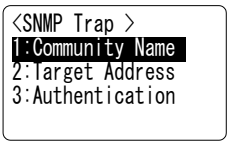
Operational Procedure

1. From the System Menu, select "2:Network."
2. Then select "6:SNMP."
3. Then select "3:Trap."



●Community name

Set a community name for the Trap.
A community name can be specified using a maximum of 16 alphanumeric characters.



●Target Address

Set the SNMP manager's IP address to which the Trap should be transmitted.
Trap is not transmitted if the IP address of "000.000.000.000" has been set.

●Authentication

Set the action of authentication trap to either "send" or "don't send" when access is recognized except from the community name and SNMP manager's IP address set in "1: Community (R/Only)" and "2: Community (R/W)."
This Trap is sent to the SNMP manager which is set in "2:Target address."

■About SNMP

- The CTR-800-11W can be managed by using Our "WebGlider" (WBG-800-01W).
- SNMP-PDU（Protocol Data Unit）conforms to SNMPv1.
- The CTR-800-11W manages the following various MIB group objects. However, because of the CTR-800-11W's functionality, non-supported objects are included in the following group.

[1.3.6.1.2.1.1]	MIB2-System
[1.3.6.1.2.1.2]	MIB2-Interfaces
[1.3.6.1.2.1.4]	MIB2-IP *1
[1.3.6.1.2.1.5]	MIB2-ICMP *1
[1.3.6.1.2.1.6]	MIB2-TCP
[1.3.6.1.2.1.7]	MIB2-UDP
[1.3.6.1.2.1.11]	MIB2-SNMP *1
[1.3.6.1.4.1.12392]	Welcat Enterprise MIB

*1 Non-supported objects are included due to the functional reason of the CTR-800-11W. Welcat Enterprise MIB is described in ASN.1 format.
Welcat Enterprise MIB is included in the optional "WebGlider" (for details, please contact our sales department).

●**Supported Traps**

Cold Start	Transmitted after MIB is initialized and the communications starts. MIB is initialized when the CTR-800-11W has been turned ON using the PW key. Note that MIB is not initialized when the CTR-800-11W has been turned ON in the resume mode.
Warm Start	Transmitted when communication starts except Cold Start. *2
Link up	Transmitted when CTR-800-11W synchronizes with an access point. However, a Link Up is not transmitted when the CTR-800-11W synchronizes with an access point for the first time (When a Cold Start or a Warm Start is transmitted). When the CTR-800-11W newly enters a service area of an access point and synchronizes, or when it synchronizes with a new access point while roaming, a Link Up is transmitted (in the same timing as signal SIGRFU_INSYNC).
Link down	Transmitted when the communication ends. However, it is not transmitted when the CTR-800-11W is outside the service area of an access point.
Authentication	Transmitted when a third person tries to access the CTR-800-11W with an invalid community. This authentication trap is sent to the IP address set through the System Menu "Trap Manager IP address" (P.4-26). However, this is transmitted only when the value "send" is set through the System Menu "Illegal access Trap" (P.4-27).

*2 MIB is not initialized even if the "CTR-800-11W" setup corresponding to MIB (IP address, subnet mask, default gateway, etc.) has been changed. In this case, a Warm Start is transmitted instead of a Cold Start.
When initializing MIB, cancel the resume mode then turn ON the power.

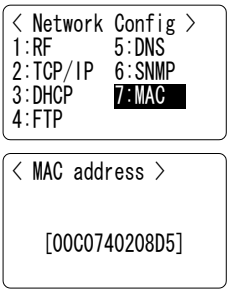
4-6-7 Displaying the MAC Address

You can display the MAC address (unique hardware address) of the CTR-800-11W. This address cannot be changed.

Operational Procedure

1. From the System Menu, select "2:Network."

2. Then select "7:MAC."

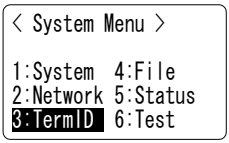


4-7 Terminal ID Setup Menu

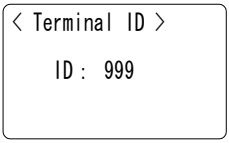
Set up the terminal ID of the CTR-800-11W, as described below. The Terminal ID should be set to a unique number for every terminal in both wireless network communications and "Welfer II" serial communications. When the DHCP function (P.4-23) is enabled, this setup can be made automatically.

Operational Procedure

1. From the System Menu, select "3:TermID."



2. Set the identification number using any combination of three numbers.



Possible Setting Range	000 ~ 999

For example, if you want to set the terminal ID to 010, press the keys in the order ⓪, ①, ⓪.

Once the new value is set, press the ENT key to confirm the change.

When using "Welfer II for Windows" for serial communications, it only recognizes the last 2 digits of the terminal ID. Keep in mind that a terminal ID of "910" and "010" are recognized as the same ID "10."

4-8 File Menu

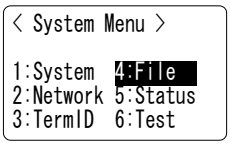
Use this menu to perform various file operations such as file execution, transmission and reception, and displaying file information.

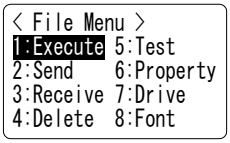
4-8-1 Starting an Application

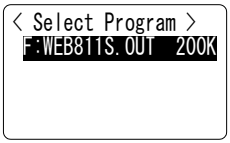
Any application can be started while the System Menu is running.

Operational Procedure

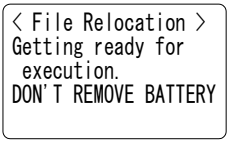
1. From the System Menu, select "4:File."
2. Then select "1:Execute."
3. When an application is selected, it will then start.







Before the application is started, the file system may rearrange the files.
The rearrangement process may take between several seconds up to several minutes. During this time, do NOT remove the battery pack. If the battery pack is removed, the data on the drive will become corrupted.



4-8-2 Transmitting Files

■ Transmitting Files via Wireless Communications

Files can be transmitted via wireless communication from the CTR-800-11W to a host computer through an access point. Communication is performed using the FTP protocol.

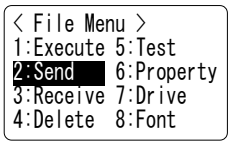
Before transmitting a file, please check the following.

- Have the wireless-communications parameters (P.4-18) been set up correctly?
- Have the Access Point and host computer been set up and connected correctly?
- Has the FTP been set up (P. 4-21) correctly?
- Is the power of the access point and the host computer on?
- Is the access point operating normally?
- Has the FTP server started on the host computer?

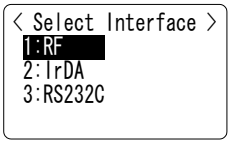
Refer to the access point (our recommended item) manual for details about the wireless network structure.

Operational Procedure

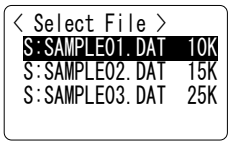
1. Turn ON the power of the CTR-800-11W and select "4:File" from the "System Menu."
2. Then select "2:Send."



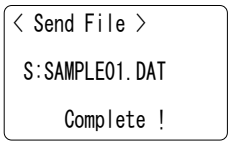
3. From the "Select Interface" select "1:RF."



4. Select a file to transmit and transmit the file.



5. When a message indicating that the file was transmitted successfully is shown on the CTR-800-11W screen, press the Ⓒ key to return to the previous screen.

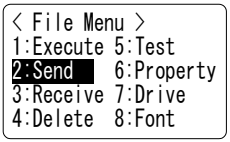


■Transmitting Files via Serial Communication

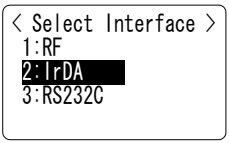
Transmitting a file from the CTR-800-11W to the host computer using "Welfer II for Windows", as follows.

Operational Procedure

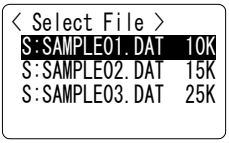
1. Start the host computer in which "Welfer II for Windows" is installed.
2. Turn ON the power of the communication cradle after connecting the communication cradle (HIF-51) to the host computer using the HIF-51 PC connection cable (WRS-AXC003A) (P.6-1). When directly connecting the CTR-800-11W and the host computer together, the PC connection cable (HOP-C031) is used.
3. Start "Welfer II for Windows" on the host computer.
4. Turn ON the power of the CTR-800-11W and select "4: File" from the System Menu.
5. Then select "2:Send."



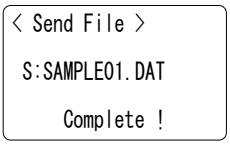
6. Select the method you want to use for transmitting the file. Select "2:IrDA" when using an communication cradle to perform infrared communication. Select "3:RS232C" when the CTR-800-11W is connected to the host computer directly using the PC connection cable.



7. Select a file to be transmitted, then transmit the file.



8. When a message indicating that the file was transmitted successfully is shown on the CTR-800-11W screen, press the Ⓒ key to return to the previous screen.



- While transmitting or receiving a file using the communication cradle (HIF-51), do not remove the CTR-800-11W from the communication cradle.
- When using "Welfer II for Windows" for serial communication, only the last 2 digits of the terminal ID are recognized.

4-8-3 Receiving Files

■ Receiving files via Wireless Communications

The CTR-800-11W can receive files transmitted from a host computer via an access point. Communication is performed using the FTP protocol.

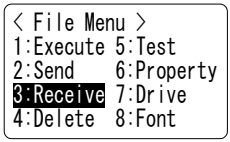
Before receiving a file, please check the following.

- Have the wireless-communication parameters (P. 4-16) been set up correctly?
- Have the Access Point and the host computer been set up and connected correctly?
- Has the FTP been set up (P. 4-24) correctly?
- Are the power of the access point and the host computer on?
- Is the access point operating normally?
- Is the FTP server running on the host computer?

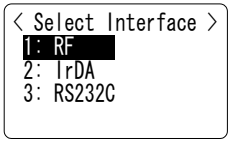
Refer to the access point (our recommended item) manual for details about the wireless network structure.

Operational Procedure

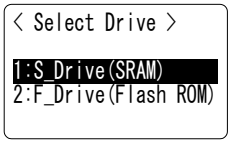
1. Turn ON the power of the CTR-800-11W and select "4: File" from the System Menu.
2. Then select "3: Receive."



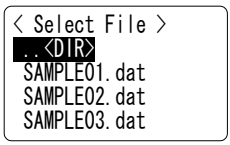
3. From the File Transmitting Methods, select "1:RF."



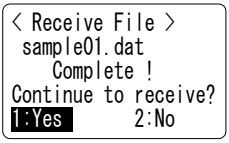
4. Select the File storing location. The file list is automatically retrieved from the FTP server.



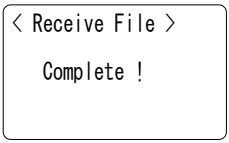
5. Select the file you want to receive and press the ENT key to start downloading.
   Any name appended with "<DIR>" is a directory. If a directory is selected, the file will move to that directory and the file list will be obtained.



6. If you want to continue downloading, select "1: YES" and repeat 5 (when downloading to the S drive).



7. When a message indicating that the file has been received successfully is shown on the CTR-800-11W screen, press the ⓒ key to return to the previous screen.



Long file names (except for 8.3 naming format) or Japanese (double-byte characters, kana characters) file names cannot be received. These files are not displayed on the file list.

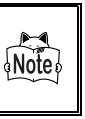
■ Receiving Files via Serial Communications

Receive a files transmitted from the host computer to the CTR-800-11W, using "Welfer II for Windows" , as described below.

Operational Procedure

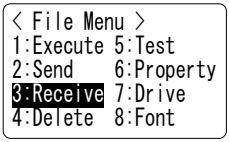
1. Start the host computer in which "Welfer II for Windows" is installed.
2. Turn ON the power of the communication cradle after connecting the communication cradle (HIF-51) to the host computer using the HIF-51 PC connection cable (WRS-AXC003A) (P.6-1).
   When directly connecting the CTR-800-11W and the host computer together, the PC connection cable (HOP-C031) is used.
3. Start "Welfer II for Windows" on the host computer. Select a file to transmit and enter the two digits representing the terminal ID for CTR-800-11W.
   (For the setting method, refer to the manual supplied with "Welfer II for Windows.")

When using "Welfer II for Windows" for serial communication, only the last 2 digits of the terminal ID are recognized.

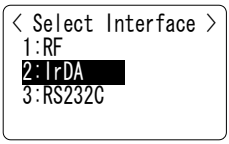


When using the communication cradle (HIF-51) via a daisy chain connection, ** should be entered as the terminal ID to allow transmission of one file to two or more terminals at once (P.6-6) (Broadcast Transmission).

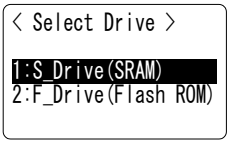
4. Turn ON the power of the CTR-800-11W and select "4:File" from the "System Menu."
5. Then select "3:Receive."



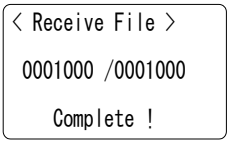
6. Select the method you want to use for receiving the file. Select "2:IrDA" when using an communication cradle to performing infrared communication. Select "3:RS232C" when the CTR-800-11W is connected to the host computer directly using the PC connection cable.

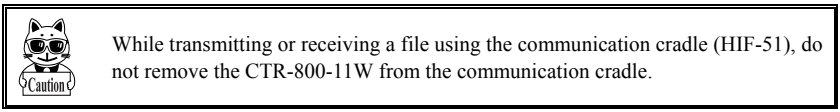


7. Select the file storing location. The CTR-800-11W will then go into a waiting state.
8. Initiate transmission from "Welfer II for Windows" on the host computer. With this, a download to CTR-800-11W will start.



9. When a message indicating that the file has been received successfully is shown on the CTR-800-11W screen, press the ⓒ key to return to the previous screen.





While transmitting or receiving a file using the communication cradle (HIF-51), do not remove the CTR-800-11W from the communication cradle.

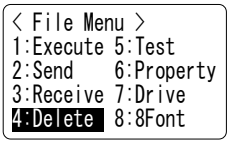
Refer to the software's included manual for information about "Welfer II for Windows" Communications Setup.

4-8-4 Deleting Files

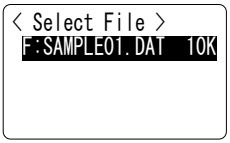
Delete unnecessary files, as described below.

Operational Procedure

1. From the System Menu, select "4:File."
2. Then select "4:Delete."



3. Select a file to delete.
4. Select "1:Delete" to delete the file. To cancel, select "2:Cancel."



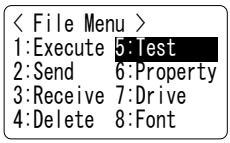
4-8-5 Testing Files

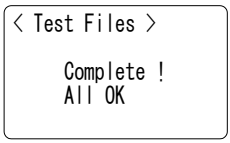
Test the stored files to see if any of them are corrupted or not. When this menu item is selected, a test will be performed automatically on the files stored in the S Drive.

Operational Procedure

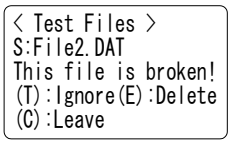
1. From the System Menu, select "4:File."
2. To start a file test, select "5:Test."
3. When completed, the message screen 1, shown right, will be displayed.
   If a corrupt file is found, a message similar to message screen 2, shown right, will be displayed in the middle of the test.
   Using the corrupt file as is, may cause the application to malfunction. If the corrupt file is not important, press the (ENT) key to delete it.

   Delete the corrupt file, or transmit it to a host computer so that an appropriate measure can be taken to restore the contents.





message screen 1



message screen 2

Message	Key to operate	Description
(T) : Ignore	Scanning key	This file is deemed normal (even if the contents are corrupted), and the file test process will continue. If the test is performed again on this file, the message in message screen 2 will not be displayed.
(C) : Leave	(C) Key	Nothing is processed. The OS will prompt the user to choose what to do again next time the CTR-800-11W is started, a file test is performed or on other occasions.
(E) : Delete	(ENT) Key	The file is deleted. If the file is not important, we recommend you to delete the file whenever possible.

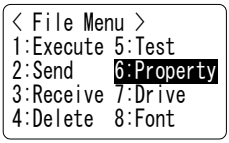
4-8-6 File Information

To view file information, follow the procedure below. The information retrieved is as follows.

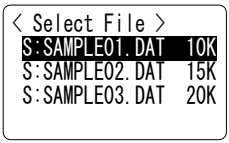
- File Name
- File Type
- File Size
- Date on which the file was last modified (Year/Month/Day/Hour/Minute/Second)

Operational Procedure

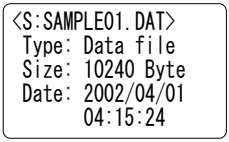
1. From the System Menu, select "4:File."
2. Select "6:Information."



3. Select a file.



4. The information of the selected file is displayed. Press the Ⓒ key to return to the previous screen.



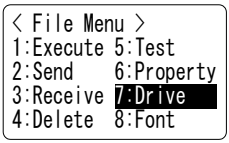
4-8-7 Drive Information

To view the information on a drive you select, follow the procedure below. The information retrieved is as follows.

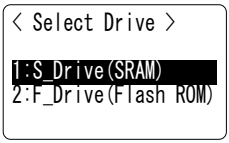
- Drive Name
- Maximum capacity for the drive
- Available space on the drive
- The number of files currently stored and the number of files that can be created

Operational Procedure

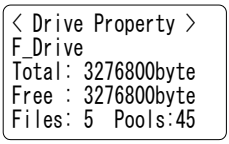
1. From the System Menu, select "4:File."
2. Select "7:Drive."



3. Select the drive on which information you want to view.



4. The information on the selected drive is displayed. Press the Ⓒ key to return to the previous screen.



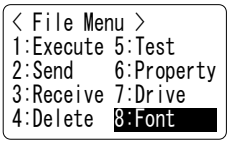
4-8-8 Changing the Font

If font files are installed, the font used in an application can be changed.

The font used for the System Menu cannot be changed. Only systemt Gothic (12-dot display) can be used.

Operational Procedure

1. From the System Menu, select "4:File."
2. Select "8:Font."
3. The current font name is displayed on the bottom line. "1:System Gothic" is the font used for the System Menu.



4. To change the current font, select "2:Optional Font" to display a list of font files. For example, if the 16-dot Gothic font provided in the CTR-800-11W model-specific library (HAP-LIB-82, optional) is loaded, it becomes possible to display 16 -dot fonts. When using an additional font, the application must support the font. In the case where an application does not support the selected font, the application may not work or the screen display may be distorted.
   The extension of a font file is "FNV."

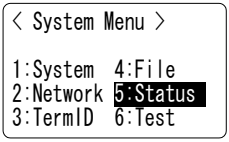
When supplied, the CTR-800-11W does not have any font files (~.FNV). When you change the font, first download 16-dot Gothic font, etc. included in the CTR-800-11W model-specific library (HAP-LIB-82, optional) to the F Drive.

4-9 Status Menu

You can check the information on the CTR-800-11W, as described below.

Operational Procedure

1. From the System Menu, select "5:Status."

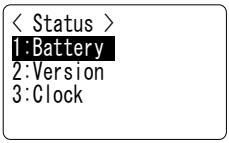


4-9-1 Battery Voltage

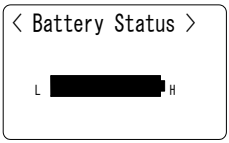
To display the voltage level of the battery pack equipped in the CTR-800-11W, follow the procedure below.

Operational Procedure

1. From the System Menu, select "5:Status."
2. Then select "1:Battery."



3. The indicator shows the battery pack's voltage level. Press the Ⓒ key to return to the previous screen.



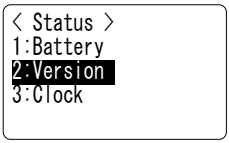
The level displayed is not the exact battery voltage. Use this level as a guide for the battery voltage.

4-9-2 OS Version

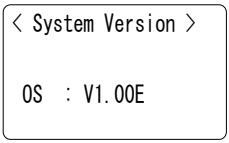
To display the version information of the CTR-800-11W's system program (OS), follow the procedure below.

Operational Procedure

1. From the System Menu, select "5:Status."
2. Then select "2:Version."



3. The version number is displayed. Press the Ⓒ key to return to the previous screen.

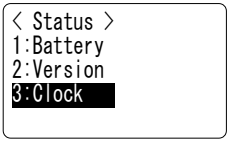


4-9-3 Clock

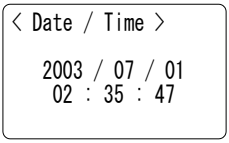
To display the time which was set up through "4-5-3 Clock Setup" (P.4-9) follow the procedure below.

Operational Procedure

1. From the System Menu, select "5:Status."
2. Then select "3:Clock."



3. The current time is displayed.

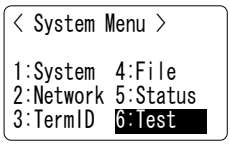


4-10 Test Menu

From this menu, you can perform various tests on the CTR-800-11W's basic functions.

Operational Procedure

1. From the System Menu, select "6:Test."



4-10-1 RF Test

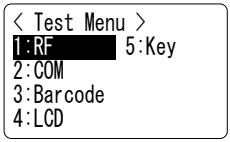
Checking the connectivity of the IP network by executing the wireless communications test and the ping command.

■Conditions Setup

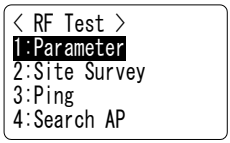
Set up the conditions under which the ping command is executed. A wireless test is performed by sending the ping command.

Operational Procedure

1. From the System Menu, select "6:Test."
2. Then select "1:RF."



3. Then select "1:Parameter."



■Conditions Setup

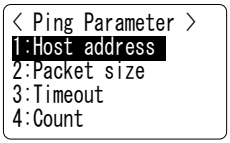
●Host address

Specify the IP address of a device with which a communication test will be performed.

●Packet size (32bytes by default)

Select the size of the data packet (in bytes) to be transmitted.

Possible Settings	32, 64, 128, 256, 512, 1024



●Timeout Period (1 second by default)

Set the Timeout period in seconds.

Possible Setting Range	1 ~ 255 seconds

●Number of Attempts (4 by default)

Set the number of attempts that can be made at transmitting the ping.

Possible Setting Range	0 ~ 255 times

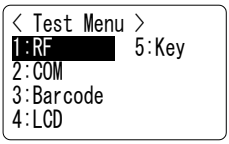
If 0 is specified, transmission of the ping command will continue until the Ⓒ key is pressed.

■RF Test

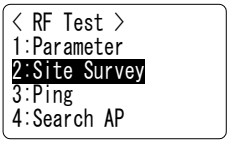
Perform a wireless test by executing the ping command. The ping command will be continually transmitted to the host IP address set in "Setup Conditions." During a wireless test, the result of the ping command, synchronized access point's MAC Address, the wireless reception level (ASL), the communication quality (LnkQ), the channel used and transmission speed are displayed.

Operational Procedure

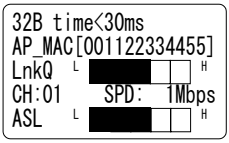
1. From the System Menu, select "6:Test."
2. Then select "1:RF."



3. Then select "2:Site Survey."



4. The wireless communications test screen is displayed and the ping communication begins.
   The 1st line displays the result of the ping command.
   The 2nd line displays the MAC address of the access point used for wireless communications.
   The 3rd line displays the LnkQ indicator showing the quality of communication with the access point.
   The 4th line displays the synchronized channel and the transmission speed.
   The 5th line displays the ASL indicator showing the level of incoming signal strength from the access point.
   To cancel, press the Ⓒ key.



For stable communication performance, we recommended that you use the CTR-800-11W at locations where the LnkQ indicates 4 or more.

The LnkQ displayed on the 3rd line and the ASL Indicator displayed on the 5th line do not represent the exact levels of incoming signal strength. Use these levels only as a guide for the wireless reception level.

■Executing the Ping

To execute the ping command under the conditions that you have set up, follow the procedure below.

Operational Procedure

1. From the System Menu, select "6:Test."
2. Then select "1:RF."
3. Then select "3:Ping."

```
< RF Test >
1:Parameter
2:Site Survey
3:Ping
4:Search AP
```

- The response time (turnaround time) is displayed for every packet transmitted and received.
- "Timeout" will be displayed if a response has not been received within the timeout period.
- If 0 is specified as the number of trials, the transmission of the ping command will be performed until the Ⓒ key is pressed.

```
< ping >
32B time<Timeout
32B time<40ms
32B time<40ms
32B time<50ms
```

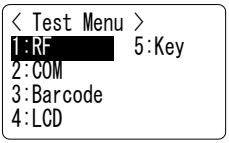
■Searching for Access Points

To start a search for available access points, follow the procedure below. The search function searches for access points which have the same SSID as the SSID set through the "■SSID Setup" (P.4-17). If the value "ANY" (or no character) has been set, a search will be made for any available access points regardless of the SSID.
In the results shown, the access point MAC addresses and synchronous channels are listed in descending order of communication quality for channels synchronized with the access point MAC addresses. The maximum number of access points, which can be displayed is 35.

Depending on the access point setup, "SSID" information may not be transmitted for security reasons. If this is the case, an access point will not be found.

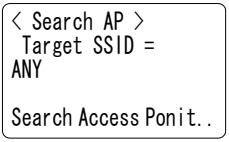
Operational Procedure

1. From the System Menu, select "6:Test."
2. Then select "1:RF."

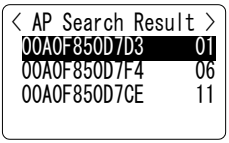


3. Then select "4:Search AP."

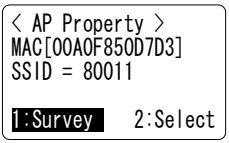
4. A search for access points will be started. The SSID that has been set through the "■SSID Setup" (P.4-17) is displayed on the lines 3 and 4 on the screen, and an access point with the same SSID setup will be searched. If the value "ANY" (or no character) has been set, any available access point will be searched regardless of the SSID.



5. The access point search results are displayed. In the results shown, the access point MAC addresses and synchronous channels are listed in descending order of communication quality. Once an access point is selected from the search results, the SSID of that access point can be obtained. A wireless test can be performed with the access point only.
   Press the Ⓒ key to return to 3.



6. The SSID of the selected access point is displayed (the SSID in the image shown right is "80011").
   Select "1:RF" to initiate a wireless test with the selected access point only. To perform this test, the "■ Conditions Setup" (P.4-43) must have been completed.
   Selecting "2:Select" will set up the SSID with the character string displayed here.



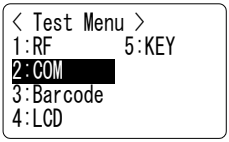
4-10-2 Serial Communication Test

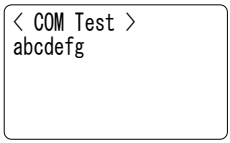
Perform a serial communications test on the CTR-800-11W, as described below. To run the test, preparation for data communication is required. For details, refer to "1-4 Preparation for Data Communication" (P.1-9), or "4-5-2 Serial Communication Setup" (P.4-8) as appropriate.

Operational Procedure

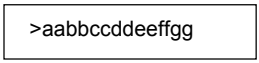
1. Connect the CTR-800-11W to the host computer using the PC connection cable (HOP-C031).
2. On the host computer, start any communication software (hyper-terminal etc.). Set up the communication software to have the same communication settings as the CTR-800-11W.
3. From the System Menu, select "6:Test."
4. Then select "2:COM."

   In serial communications, a loopback test is performed. When you enter any character using the host computer keyboard, the same character will be displayed on the CTR-800-11W screen. If "local echo" is set on the communication software side, the character entered using the keyboard can be verified also on the host computer.(Refer to the screen example.) When the CTR-800-11W is directly connected to the host computer via the PC connection cable (HOP-C031), every character entered will display twice on the host computer screen.
5. Press the Ⓒ key to return to the screen immediately before the test.





●Screen example

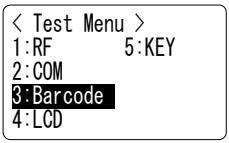


4-10-3 Barcode Scanning test

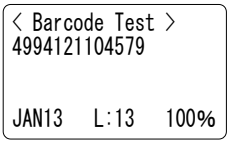
Perform a barcode scanning test, as described below. A sample barcode can be found in "Sample Barcode" (Appendix B-2).

Operational Procedure

1. From the System Menu, select "6:Test."
2. Then select "3:Barcode."



3. Press the scan key to scan the barcode. The scan result is displayed on the screen, similar to the image shown right.
   The scanned barcode is displayed on the 2nd line. The type and the number of digits of the scanned barcode are displayed on the bottom line. If you hold down the scan key for approximately 1 second, the continuous scanning mode will be enabled. Scanning will continue until you release the scan key, and the success rate will be displayed in the bottom right of the screen.
   If the trigger mode or the power save mode is set, it will not affect the continuous scanning.

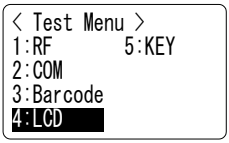


4-10-4 Screen Display Test

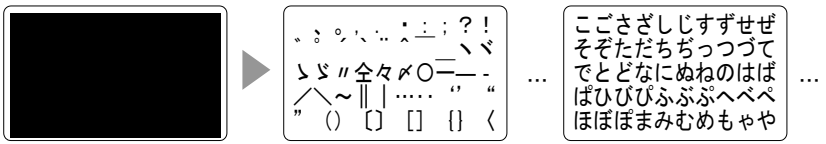
Perform a screen display test, as described below.

Operational Procedure

1. From the System Menu, select "6:Test."
2. Then select "4:LCD"



3. The backlight is turned ON and the whole screen is filled in. If any keys are pressed, the corresponding characters will be displayed on the screen in sequence. If the scan key is pressed, the test will stop with the screen displaying where the test stopped. The test will resume if the scan key is pressed again. If the ⓒ key is pressed, the test will be aborted and the CTR-800-11W will return to the screen immediately before the test.

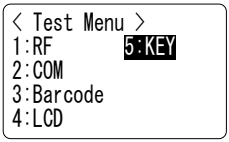


4-10-5 Key Input Test

To perform a key input test, follow the procedure below. Along with this test, tests on the buzzer, vibration, and LED light are also performed.

Operational Procedure

1. From the System Menu, select "6:Test."
2. Then select "5:Key."



3. The test screen is displayed. If any key is pressed, the key's mark will be displayed on the screen. If the (SF) key is held down and any key is pressed, the mark will be highlighted. Also, no matter which key is pressed, the buzzer and vibrator will be tested.
   During the test, if the (PW) is pressed, the power will not be turned OFF. Press the (C) key to return to the screen before the test.
   The LED light test is also performed according to the key pressed. Refer to the following table for information about the LED color-key correlation.

Key	Scanning LED color	Warning LED Color
(PW) (BS) (SF) (ENT) Scan key	Orange	Red
(0) ~ (9) (.)	Green	---
(F1) ~ (F8)	Red	---

4-11 Other Functions

4-11-1 Low Voltage Warning

If the voltage level of the equipped battery pack decreases, it becomes impossible to perform the following operations with the System Menu.

- Launch of applications
- File transmission, reception, deletion and test
- Clock setup

If any of the operations mentioned above is performed when the voltage level of the battery pack is low, the screen, similar to the image shown right, will be displayed.
At this time, [Battery Low] is displayed on the 2nd line of the screen, and CTR-800-11W will beep 3 times for warning.

```
< File Menu >
  [ Battery Low ]
You can't finish
this operation.
Change battery pack!
```

Even if the voltage level of the battery pack is low, operations of the System Menu other than those above can be performed.
Also, when the CTR-800-11W judges that the voltage level is less than the regulation level, it displays a message on the screen, shown right, for 5 seconds while sounding short beeps, and then shuts down automatically.

```
[ Batterey Low ]


Change battery pack!
```

4-11-2 Auto-power-off

Through the System Menu, if no key operation is performed for approximately 10 minutes, the power shuts off automatically.

This function may also be incorporated into an application. Refer to the applications manual for details.

4-12 Initialization of the CTR-800-11W

While using the CTR-800-11W, the contents in the memory storage area may be corrupted for some reasons and the CTR-800-11W may not operate normally. Although almost all those abnormalities are corrected automatically through the System Menu, a serious error may not be able to be corrected.

In such a case, internal memory can be erased using the following method. This will reset the CTR-800-11W back to factory settings.

Refer to "Appendix A - System Menu, Factory Settings" (Appendix A-2) for information about the System Menu factory settings.

Be careful when performing this operation since this operation will erase the System Menu setup and any data or programs saved in the CTR-800-11W. Also, when you perform this operation, turn OFF the suspend mode.

■Initialization of the "System Menu"

Operational Procedure

1. Turn OFF the power of the CTR-800-11W.
2. Press the scan key, (SF) key and the (C) key simultaneously. Then press the (PW) key. Then press the PW key. The System Menu will be initialized and reboot.

Using this function, all the System Menu setup is initialized. The files saved on the CTR-800-11W are not erased.

■Full Initialization

This function will erase all files and applications except the OS from the CTR-800-11W. The **"CTR-800 browser" installed at the time of purchase is also erased**. Make sure to back up everything before initialization.

Prepare a fully charged battery pack before performing a full initialization. Also, do not remove the battery pack during this process. A full initialization takes approximately 7 to 10 minutes. No keys can be entered during this procedure. If the battery pack is discharged or removed during the initialization process, the initialization is performed incompletely and the CTR-800-11W data area may be corrupted.

Operational Procedure

1. Turn OFF the power of the CTR-800-11W.
2. Press the (SF) key, (C) key and the (·) key simultaneously and press the (PW) key. After displaying a confirmation message, the CTR-800-11W will be initialized.

■Maintenance Notes

Please note that the CTR-800-11W will be fully initialized at the time of maintenance or checkup. Although the "CTR-800 browser" is reinstalled before returning, your created files cannot be reinstalled. We recommend that a backup be taken.

Chapter 5

FAQ

5-1 FAQ (Frequently Asked Questions)

This chapter lists frequently asked questions, problems and operations that need to be performed to solve problems, and reference pages for items in this manual.

Q: The power does not turn ON.

■Is the battery pack equipped correctly? ---- (P.2-11)
■Is the battery pack charged?---- (P.2-9)
■Aren't the battery pack electrodes dirty? ---- (P.2-9)

Q: Nothing is displayed on the screen.

■Is the battery pack equipped correctly? ---- (P.2-11)
■Is the battery pack charged?---- (P.2-9)
■Aren't the battery pack electrodes dirty? ---- (P.2-9)

<In the case where the items mentioned above have been checked and the problem is still unsolved>
Please start the system menu using the following method.

Remove the battery pack → Wait 10 seconds → Install the battery pack → Hold down the scan key then press the (PW) key.

If the problem persists even after using the method above, turn OFF the power, hold down the (SF), (C) and scan key together then press the (PW) key. This will initialize the System Menu. ---- (P.4-51)

Q: After not using for a while, the power is shut OFF.

■Is the battery pack charged?---- (P.2-9)
■Hasn't the Auto-power-off function been set to start?---- (P.4-50)

Q: It cannot charge.

■Has the charger been equipped with the battery pack correctly?
Please refer to the instruction manual included in the "Battery pack HBC-51/54 dedicated charger HQC-51/54" for information on charging the battery pack.

Q: The System Menu does not start.

■Is an "User Program" not set to "Startup"? ---- (P.4-7)
From the System Menu, select "1:System", then "1:Startup" to set the System Menu for automatic launch.

■To force the launch of the System Menu, hold the scan key then press the ⓟⓦ key. ---- (P.4-5)

Q: How do I change the application which starts when the power is turned ON?

From the System Menu, select "1:System", then "1:Startup" to set the desired application for automatic launch. ---- (P.4-7)

Q: How do I start another application?

From the System Menu, select "4:File" then "1:Execute" then select an application to run. ---- (P.4-30)

Q: The barcode is not scanned successfully.

■ Does the scanned bar code meet the barcode settings set in the application?
Some application settings prohibit a specific kind of barcode from being scanned.

■Isn't specular reflection occurring? ---- (P.2-7)
■Is scanning distance correct?---- (P.2-6)
■Isn't the filter of the barcode sensor dirty? ---- (P.1-4)
If the filter of the barcode sensor is dirty, the bar code may not be scanned correctly. Please wipe the filter with a dry soft cloth.

Q: How do I check the free area of a drive?

From the System Menu, select "4:File" then select "7:Drive" to check the drive.---- (P.4-39)

Q: I cannot perform wireless data communications.

■Is the access point connected to the Ethernet LAN?
・If the LAN cable has fallen out or a link is not established, some access points do not perform wireless communications.

<When the Warning LED lights ON>

■Is terminal SSID setting the same as the access point SSID settings? ---- (P.4-17)
Please set the access point SSID and terminal SSID the same.
When the terminal SSID is set to "ANY" (blank), it may be unable to connect because of the access point functions. Refer to the access point manual for more information.

■Is the authentication setup correct? ---- (P.4-19)
Please set the access point Authentication System and terminal Authentication System settings the same.
If in "SHARED" mode, please check the WEP settings.

■Please check the Preamble settings. ---- (P.4-21)
If the terminal's Preamble is set to "SHORT," is the access point not set to "LONG" or something not compliant with "SHORT"?

<When Warning LED turns off or blinks>

■Are the WEP settings the same?
Are the WEP Keys the same? ("Null," "40bits," "128bits")
Do the WEP's TxKEY_ID and the WEP key match? (P.4-19)

■Doesn't an access point with a same channel or interfering channel exist?
In the case where a non-interfering channel is set, a maximum of 4 access points can be used in the one area.

■Isn't the wireless transmission being interfered by an obstacle?
Please check whether there is no equipment, such as a microwave oven or other WLANs etc, which can cause interference.
Also, since a computer may act as a noise generation source, move the access point and terminal away from the computer (1m or more).

■Aren't there any problems with the TCP/IP settings (IP address etc)?---- (P.4-22)
Check it to see if the terminal can connect to the computer by using the ping command etc.

Q: Data communications cannot be performed via IrDA or RS-232C.

■Is each piece of equipment connected correctly?
・Connection between the CTR-800-11W and the PC---- (P.1-5)
Use the PC connection cable (HOP-C031).
・Connection between the communication cradle (HIF-51) and the PC---- (P.1-5)
Use of daisy chain connection for the communication cradle (HIF-51)
・Use of daisy chain connection for the communication cradle (HIF-51)---- (P.6-6)
Use the daisy chain connection cable (STP-C001A).
■Has the serial communication settings been set correctly? ---- (P.4-8)
■Are the communication cradle and computer connected correctly?
■When using a daisy chain connection, have the communication cradle (HIF-51) DIP switches been set correctly?---- (P. 6-6)
■ Isn't the CTR-800-11W IrDA interface or the communication cradle (HIF-51) IrDA interface dirty? ---- (P.1-4)
If the IrDA interface is dirty, IrDA communication may not be performed correctly. Please wipe the interface with a dry soft cloth.

Q: "Writing Failed" was displayed during transmission or reception of a file.

■This message is displayed when there is little space left on the S Drive.
It is displayed when there is little space left on the S Drive. ---- (P.3-3, 4-36)
When you use the F Drive to receive files, the CTR-800-11W requires the S drive to have the available space sufficient to store files to be received. Create some free space on the S Drive by deleting some files then start again.

Q: "Time Out" was displayed during transmission or reception of a file.

This may be displayed after a fixed period of time has passed while in the transmission or reception waiting state.

■Is the communication software running on the host computer?--- (Refer to the manual supplied with "Welfer II for Windows.")
■Is the communication settings made correctly? ---- (P.4-8, 4-16,4-29)
■Are the communication cradle (HIF-51) and the host computer connected correctly? ---- (P.1-5, 6-5)
■Are the CTR-800-11W and the host computer connected correctly?---- (P. 1-5)
■ Isn't the CTR-800-11W IrDA interface or the communication cradle (HIF-51) IrDA interface dirty?---- (P.1-4)
If the IrDA interface is dirty, IrDA communication may not be performed correctly. Please wipe the interface with a dry soft cloth.

■Does the host computer have enough resources?
When applications other than the communication software are being used, the computer may run out of resources and cause the file transmission and reception to fail. Close as many applications not needed for communication as possible, and then try again.

Q: "Connection Failed" was displayed during transmission or reception of a file.

■Have the communication setup for wireless communications and the network setup been performed correctly?---- (P.4-8, 4-16, 4-29)
■Is the FTP server running on the host computer?
■Are the access point (our recommended item) and computer connected correctly through the LAN circuit?---- (P.1-5)
■Have the FTP settings been made correctly? ---- (P.4-24)

Q: I want to perform the setup of the terminal IP address etc. at a time from a computer.

Automatic setup of a terminal can be performed by using the DHCP server function of the "WebGlider."

Q: Starting an application or transmission/reception of a file cannot be performed.

When the voltage level of the battery pack is low, the CTR-800-11W is unable to handle some functions.
Is the battery pack charged? ---- (P.4-50, 2-9)

Q: I suspect that the file is corrupt.

Either delete the file, or transmit the file to the host computer to recover the data. ---- (P.4-36,4-37,)

Q: "Application Error" was displayed and after pressing a key, the power turned OFF.

This is displayed when the application created an illegal process. When this message is displayed, the application will be forced to terminate if any key is pressed. The power may be shut off. The form of the message displayed changes depending on the type of error, or system program version.

Please consult the system administrator.

Q: "System Error" was displayed and after pressing a key, the power turned OFF.

This is displayed when a system program is not able to specify the cause of an error. Possible causes include failures in hardware, system program or application, external factors like strong static electricity, and user errors. If a system error message is displayed, the power will be shut off if any key is pressed. At the next startup, CTR-800-11W tries to restore as much as possible.

Please turn ON the power again.---- (P.4-5)

Chapter 6

Communication Cradle (HIF-51)

This chapter explains about the communication cradle (HIF-51). When you use the communication cradle (HIF-51), please read this chapter and also the manual included with the communication cradle (HIF-51).

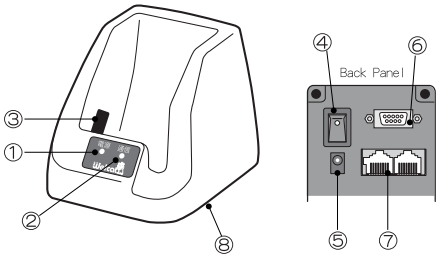
6-1 Introduction

The communication cradle is used with "Welfer II for Windows" only for file transfers.
Using the IrDA communication function of the CTR-800-11W, data communication can be performed with the host computer in which "Welfer II for Windows" has been installed, via the communication cradle. When using the daisy chain connection cable (STP-C001A), you can transmit one file to two or more terminals at once from a host computer (broadcast transmission). When a daisy chain connection of two or more communication cradles is being made, data can be transmitted to a host computer from every terminal linked to the communication cradle.

■About the daisy chain connection

The daisy chain connection method connects additional equipment to the last one to form a chain of connection. When using communication cradles (HIF-51) in a daisy chain system, a maximum of 16 units (full length connection of 1200m) can be used. Refer to "6-3 Daisy Chain Connection" (P.6-6) for details.

6-1-1 Part Names



1. Power LED
   Turns green when the power is ON.
   The light turns red during communication or communication standby.

> Caution
> Start transmission and reception of a file when the power LED is green. (Refer to "■About the power LED" (P.6-4))

2. Communication LED
   Turns orange during data transmission from the CTR-800-11W.
   Turns green during data reception to the CTR-800-11W.
3. Infrared communication (IrDA) interface
   Performs infrared communication (IrDA) with the CTR-800-11W.
   (IrDA SIR 1.2 Low Power Option standard)

> Caution
> If the infrared communication (IrDA) interface is dirty, it may cause incorrect operation.

4. Power switch
5. AC power connector
6. RS-232C connector
   Used to connect the communication cradle to the host computer via a HIF-51 PC connection cable (WRS-AXC003A: option).
7. RS-485 Connector × 2
   Used to create a daisy chain connection by connecting an communication cradle to other communication cradles (HIF-51) via a daisy chain connection cable (STP-C001A: optional).

8. DIP switches
   Sets up the communication cradle (HIF-51).
   (Factory settings = DIP switches 1 to 6 are all turned off.)

Do not change the factory settings of DIP switches No.2 to No.6 at the bottom of the communication cradle (HIF-51).
If the DIP switches are changed, the unit may operate incorrectly or fail when creating a daisy chain connection with two or more units. For details about connecting more than one unit via a daisy chain connection, refer to P. 6-6

■About the power LED

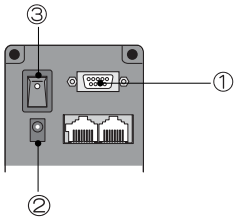
If the CTR-800-11W is removed from the communication cradle (HIF-51) during communication, the power LED may remain red for a while. At this point, the communication process is still progressing between the communication cradle (HIF-51) and the host computer. After the communication process has completed and the power LED turns green, start the transmission and reception of the next file.
When the power LED is red, the next file cannot be correctly transmitted or received.

6-2 Connection

6-2-1 Connection with a Host Computer

When connecting to a host computer, make certain you have the HIF-51 PC connection cable (WRS-AXC003A) on hand.

1. Connect an communication cradle to a host computer using the HIF-51 PC connection cable (WRS-AXC003A).
2. Connect the AC adapter.
3. Turn ON the power switch on the back of the communication cradle.

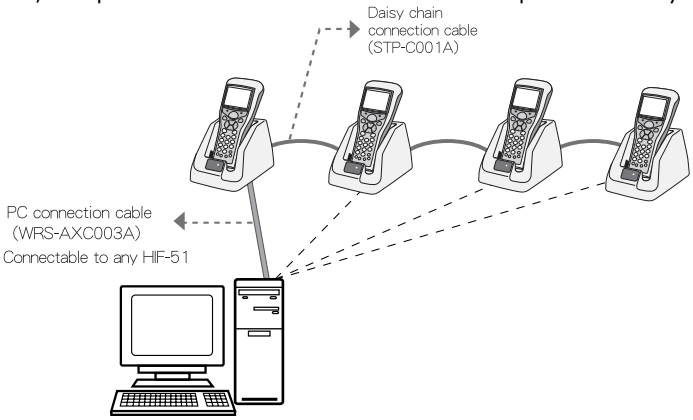


Once the CTR-800-11W has been prepared for data transmission and reception, you can place the CTR-800-11W onto the unit (HIF-51) and begin transmitting and receiving data. (P.4-32、4-34)

Please place the CTR-800-11W prepared for transmission and reception of data on the communication cradle (HIF-51) when the power LED is green. If you place the terminal onto the communication cradle (HIF-51) while the power LED is red, transmission and reception will fail.
Please do not operate the CTR-800-11W while on the communication cradle (HIF-51). The communication cradle may triple over or the CTR-800-11W may fall from the unit, possibly causing a failure.
Please do not use the communication cradle near noise-emitting equipment, such as a computer, fluorescent light etc.
Noise may cause incorrect communication.

6-3 Daisy Chain Connection

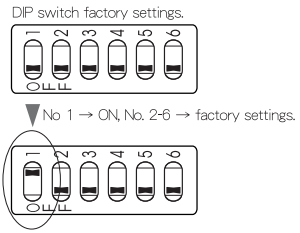
By using communication cradles (HIF-51) and daisy chain connection cables (STP-C001A), you can create a daisy chain connection of a maximum of 16 units. In a daisy chain connection, you can transmit one file to two or more terminals at once from a host computer (broadcast transmission). Moreover, in the case where two or more communication cradles are connected via a daisy chain connection, it is possible to transmit data to a host computer from any unit.



During data communication via the communication cradle, do not turn ON or OFF any of the other communication cradles.
If you do this, data communications may fail.

●DIP switch setup

When using a daisy chain connection, the "DIP switches" on the bottom of the communication cradle (HIF-51) needs to be set up.
The first switch of the "DIP switches" must be set to "ON" for the communication cradles at both ends of the daisy chain. Please do not change DIP switches 2 to 6.
Refer to "6-3-1 Configuration Examples - (DIP switch setup) " (P.6-7) for details of the "DIP switch" settings.

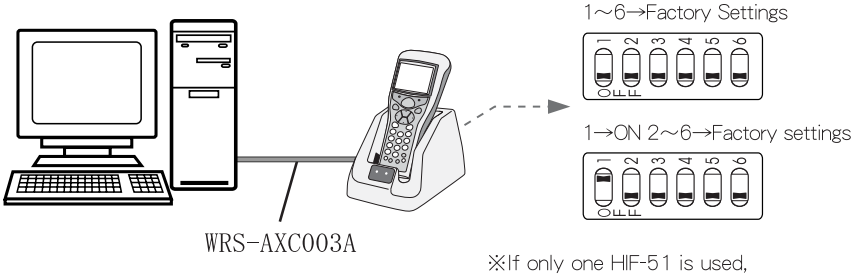


●Points to be noted during communication

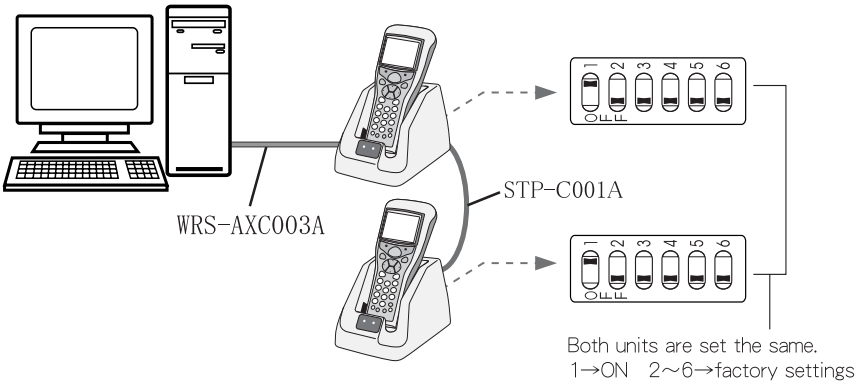
If an communication cradle attempts communication with the host computer while one of such units is already communicating via a daisy chain connection, the message "Busy" is displayed on the CTR-800-11W screen, then the CTR-800-11W and the unit will go into communication standby mode. Communication will begin once the line becomes available. Press the ⓒ key to cancel the communication standby mode.

6-3-1 Configuration Examples - (DIP switch setup)

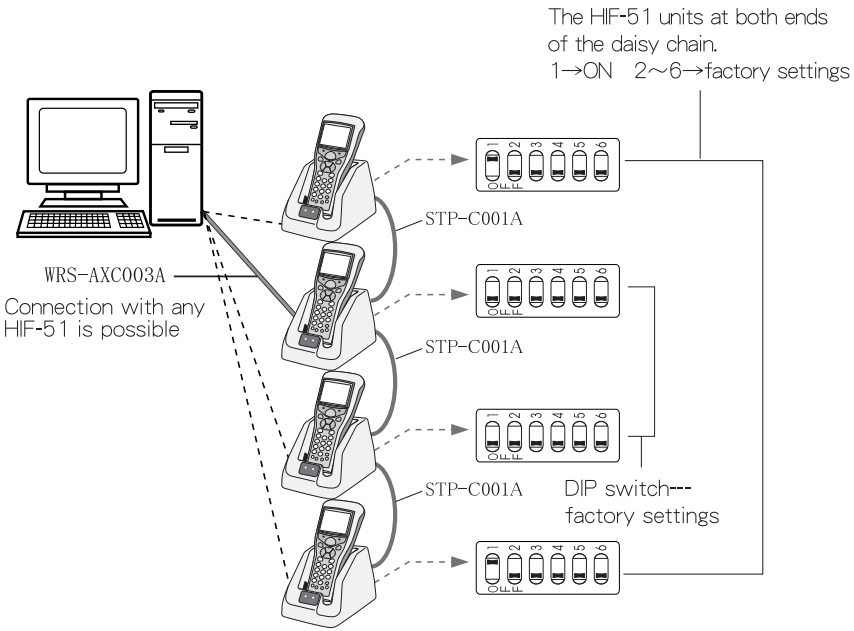
■When using one communication cradle (HIF-51).



■When using two communication cradles (HIF-51)



■When using three or more communication cradles (HIF-51)



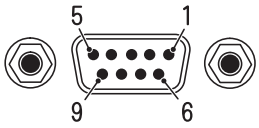
■DIP Switch Specification

Switch Number	Description
1	ON: terminating resistance; OFF: no terminating resistance
2	Do not change these switches.
3	
4	
5	
6	

If the DIP switches on the bottom of the communication cradle (HIF-51) are changed unnecessarily, the unit may not operate correctly and it may cause failure.

6-4 Interface

6-4-1 RS-232C Interface

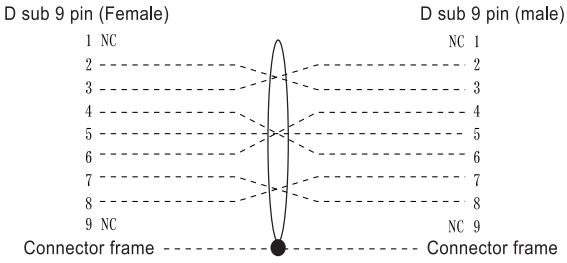


（Dsub-9S）

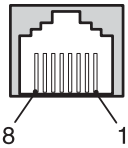
The terminal signal level is JISX5101 equivalent. The pin arrangement is of DTE specification.

Pin number	Terminal name	Direction	Description
1	NC	-	Prohibited
2	RxD	Input	Receive data
3	TxD	Output	Transmit data
4	DTR	Output	Data terminal ready
5	GND	-	Signal ground
6	DSR	Input	Data set ready
7	RTS	Output	Send request
8	CTS	Input	Transmission possible
9	NC	-	Prohibited

● Communication cradle (HIF-51) PC connection cable (WRS-AXC003A) schematic



6-4-2 RS-485 Interface



Pin number	Description
1	Prohibited
2	Prohibited
3	Prohibited
4	Signal line (+)
5	Signal line (-)
6	HIF-51 connection detection line
7	HIF-51 connection detection line
8	GND

When using a daisy chain connection, be sure to use the daisy chain connection cable (STP-C001A). The unit may fail if other purchased Ethernet cables are used.

6-4-3 Interface Specification

RS-232C	Communication system		Full duplex
	Synchronous system		Start-stop synchronization
	Communication conditions	Baud rate	2400-115200bps
		Data bit length	7 bits / 8 bits
		Parity	Even, odd, none
		Stop bit length	1 bit / 2 bits
		Flow control	RTS/CTS control
	Connector		HDEB-9S Made by Hirose Electric D-sub9S
	Grommet		RDG-LNA-W1 Made by Hirose Electric
	Female screw		M2.6

RS-485 multi-drop	Communication system		Half duplex
	Synchronous system		Start-stop synchronization
	Communication conditions	Baud rate	2400-115200bps
		Data bit length	7 bits / 8 bits
		Parity	Even, odd, none
		Stop bit length	1 bit / 2 bits
	Connector		HEC0470-01-230 Made by Hoshiden - RJ-45

Infrared communications (IrDA)	IrDA Standard		IrDA SIR 1.2 Low Power Option standard
	Communication system		Half Duplex
	Transmission speed		2400-115200bps
	Synchronous system		Asynchronous method
	Communication conditions	Baud rate	2400-115200bps
		Data bit length	7 bits / 8 bits
		Parity	Even, odd, none
		Stop bit length	1 bit / 2 bits

Communication conditions depend on the CTR-800-11W settings.

Appendix A

System Menu Factory Settings

System Menu Factory Settings

Item	Menu Tree	Possible Setting Range	Factory Settings
Startup	1:System→1:Startup	System Menu User Program	1:System Menu
COM Speed	1:System→1:COM →1:Speed	2400・9600・19200・ 38400・57600・ 115200bps	6:115200bps
COM Data Bits	1:System→1:COM →2:Data Bits	7 bits 8 bits	2:8 bits
COM Stop Bits	1:System→1:COM →3:Stop Bits	1 bit 2 bits	1:1 bit
COM Parity	1:System→1:COM →4:Parity	Odd Parity Even Parity No Pariyt	3:No Parity
COM Port	1:System→1:COM →5:Port	IrDA RS232C	1：IrDA
LCD	1:System→4:LCD	Level 1 - 8	Level 4
BuzzerVolume	1:System→5:Buzzer →1:Buzzer Volume	Level 1 - 8	Level 8
Buzzer Device Type	1:System→5:Buzzer →2:Device Type	Buzzer Vibrator Both	1:Buzzer
Scanner Trigger Mode	1:System→6:Scanner →1:Trigger Mode	Normal Mode Dupulex Mode Release Mode	1:Normal Mode
Scanner Power Mode	1:System→6:Scanner →2:Power Mode	Coutiunuous On Middle Power Low Power	2:Middle Power
Suspend	1:System→7:Suspend	ON OFF	OFF
SSID	2:Network→1:RF →1:Basic →1:SSID	32 characters consisting of single-byte alphanumeric character and symbol	80011
Roaming	2:Network→1:RF →1:Basic →2:Roaming	Fast Normal Slow	2:Normal
DOZE Timeouot	2:Network→1:RF →1:Basic →3:DOZE Timeout	Instantly, 1, 2, 3, 4, 5, 10 seconds, None	2:5 seconds
TxSpeed	2:Network→1:RF →1:Basic →4:TxSpeed	Auto, 1Mbps, 2Mbps, 1 or 2Mbps, 5.5Mbps, 11Mbps	1：Auto

Item	Menu Tree	Possible Setting Range	Factory Settings
WEP	2:Network→1:RF →2:Security →1:WEP →1:WEP	Disable, 40bits, 128bits	Disable
WEP TxKEY_ID	2:Network→1:RF →2:Security →1:WEP →2:WEP TxKEY_ID	KEY1, KEY2, KEY3, KEY4	1:KEY1
Key Data	2:Network→1:RF →2:Security →1:WEP →3:KEY Data	Setting the contents of each WEP key (1, 2, 3, 4). Characters which can be used are "0" - "9", "A" - "F" and "a" - "f." When a 40 bits is selected, the WEP is a fixed 10 characters. When 128 bits is selected, it is a fixed 26 characters	
AuthenMode	2:Network→1:RF →2:Security →2:Authen Mode	OPEN, SHARED	OPEN
Preamble	2:Network→1:RF →3:Advanced →1:Preamble	LONG, SHORT	LONG
RTS_Threshold	2:Network→1:RF →3:Advanced →2:RTS_Threshold	Even value of between 0-3000 bytes	2432 (byte)
IP Address	2:Network→2:TCP/IP →1:IP Address	value which is divided into four fields by a period	000.000.000.000
Subnet Mask	2:Network→2:TCP/IP →2:Subnet Mask	value which is divided into four fields by a period	000.000.000.000
Gateway	2:Network→2:TCP/IP →3:Gateway	value which is divided into four fields by a period	000.000.000.000
DHCP Client	2:Network→3:DHCP	Not use Run now Run at startup	1:Not use
FTPHost Address	2:Network→4:FTP →1:Host Address	value which is divided into four fields by a period	000.000.000.000
FTP Username	2:Network→4:FTP →2:Username	up to 18 alphanumeric characters	No settings
FTP Password	2:Network→4:FTP →3:Password	up to 20 alphanumeric characters	No settings

Item	Menu Tree	Possible Setting Range	Factory Settings
Primary DNS Server	2:Network→5:DNS →1:Primary Server	value which is divided into four fields by a period	000.000.000.000
Secondary DNS Server	2:Network→5:DNS →2:Secondary Server	value which is divided into four fields by a period	000.000.000.000
SNMP Community (R/Only) Community Name	2:Network→6:SNMP →1:Community(R/Only) →1:Community Name		public
SNMP Community (R/Only) Manager IP Address	2:Network→6:SNMP →1:Community (R/Only) →2:Manager Address		000.000.000.000
SNMP Community (R/W) Community Name	2:Network→6:SNMP →2:Community (R/W) →1:Community Name		private
SNMP Community (R/W) Manager IP Address	2:Network→6:SNMP →2:Community(R/W) →2:Manager Address		000.000.000.000
SNMP Trap Community Name	2:Network→6:SNMP →3:Trap →2:Community Name		CTR800
SNMP Trap Manager Address	2:Network→6:SNMP →3:Trap →2:Manager Address		000.000.000.000
SNMP Trap Authentication	2:Network→6:SNMP →3:Trap →3:Authentication	1:Enable 2:Disable	2:Disable
ping Host Address	6:Test→1:RF →1:Parameter →1:Host Address	value which is divided into four fields by a period	000.000.000.000
ping packet size	6:Test→1:RF →1:Parameter →2:Packet size	32・64・128・256・512・1024・1500 byte	1：32 byte
ping Timeout	6:Test→1:RF →1:Parameter →3:Timeout	1～255 seconds	1 second
ping Count	6:Test→1:RF →1:Parameter →4:Count	0～255 times	4 times

Appendix B

Sample Barcode

Sample Barcode

■**JAN13**

■**JAN8**

■**UPC-E**

■CODE39 (C/D)

■CODE39 (No C/D)

App. B

■**NW-7 (C/D)**

■**NW-7 (No C/D)**

■**NW-7 (HEX)**

■**ITF (C/D)**

■**ITF (No C/D)**

■ITF (Standard ITF-14)

■ITF (Extended ITF-16)

■ITF (Add on version ITF-6)

App. B

■CODE128 (Codeset A)

■CODE128 (Codeset B)

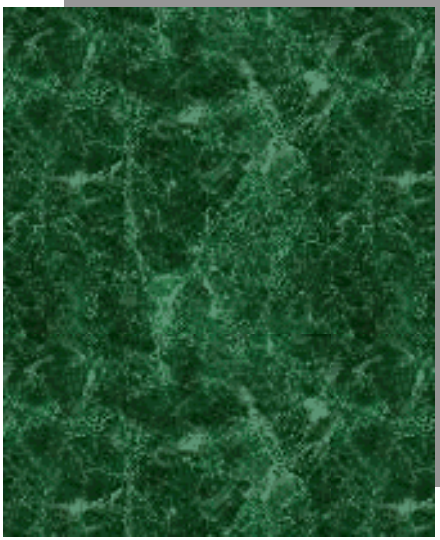
■CODE128 (Codeset C)

App. B

■EAN128 (Codeset A)

■EAN128 (Codeset B)

■EAN128 (Codeset C)



Index

A

B

C

D

O

P

R

S

T

U

V

W

Welcat Inc.