

Mobile Terminal (S1596-01) USER´S GUIDE



Safety precautions

Introduction

The following precautions are provided for using the Mobile Terminal safely. The symbols used and their meanings are described below. Make sure you have understood the safety precautions before going to the main text.

<Symbols>

Notation				
Δ	WARNING	WARNING indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.		
Δ	CAUTION	CAUTION indicates an imminently hazardous situation which, if not avoided, may result in minor or moderate injury and property damage. It may be also used to alert against unsafe practices.		

Mean	ing of symbols		
	Potential fire or smoke caused by misuse.	8	Do not use in extreme humidity or near water.
	Potential burst caused by misuse.	8	Do not disassemble the device.
A	Potential electric shock caused by misuse.		Pull out the power plug.
	Potential injury caused by misuse.		



☐ Do not use in extreme humidity or near water. Otherwise, this may cause short circuit or corrosions.	8		
☐ Keep the devices away from direct sunlight or high temperatures. This may cause charging devices to overheat, ignite or cause damage to circuits.	⚠		
☐ Do not disassemble except authorized service personnel. This may cause electric shock, fire, or equipment failure.	8	A	▲
☐ Do not use it in the place with flammable gases and combustible substance and the place where drugs, chemicals, etc. are treated. Otherwise, this may result in battery explosion, fire, or equipment failure.			
☐ Do not use with non-specified voltage. This may cause equipment failure or electric shock.		A	
\square Do not use any AC Adapter other than the AC Adapter (S1596-04) provided with the device.			
☐ Do not plug multiple extensions into a single outlet.		A	
☐ If you notice something unusual such as abnormal smell, overheating, change in color or deformation, unplug the power cable from the outlet.	<u> </u>		
☐ Do not place the devices in a cooking artifact such as microwave oven or pressure cooker. This may		▲	

cause overheat, burst, or ignition.			
☐ Do not touch charging device, power cord, or AC socket with wet hands. This may cause equipment failure, electric shock or bodily injury.	A		
☐ Do not place heavy objects over the power cord. Do not twist or jerk the cables. This may cause electric shock, fire, or equipment failure.	⚠		
\square Do not place in extreme humidity or dust. Otherwise this may cause fire.			
☐ Do not use the one other than Main Battery (\$1596-05), Sub Battery(858-830037-001-) and RTC Battery(858-830043-001-). This may cause electric shock, fire, or equipment failure.	A		-
☐ Dispose of the MainBattery, Sub Battery and RTC Battery in fire and do not disassemble or modify a charging device. This may cause overheat, burst, ignition, or bodily injury.			
\square Keep the device away from infants. This may cause potential risk of death or serious injury.			
☐ Set the Main Battery, Sub Battery and RTC Battery in the Mobile Terminal correctly. This may cause bodily injury or fire.		▲	
☐ If you hear thunder, move to a safe place immediately and do not touch a charging device, power cord.	A		
☐ Do not use the device when it is broken down. This may cause electric shock or fire.	A		
☐ Do not block, insert metal objects or pour liquid into the ventilation holes or into the opening. This may	A		

cause electric shock, fire, or		
equipment failure.		

⚠ CAUTION

\square Use the device on the following conditions.			
Otherwise, this may cause equipment failure.			
Temperature and Humidity			
Operating : 0 to 40□ , 35 to			
85%(non-condensing)			
Non-Operating: -10 to $60\square$, 10 to			
85%(non-condensing)			
\square Do not place the device near a place where the			
temperature changes violently or thermogenic			
equipment.			
This may cause deformation or equipment			
failure.			
☐ Do not place near equipment generating strong			
magnetic field or equipment operated using			
electric wave.			
This may cause noise or equipment failure.	_		
☐ Do not use with non-specified voltage. This	A	Δ	
may cause equipment failure, electric shock.	~~	757	
☐ Risk of explosion if Main Battery, Sub			
Battery and Main Battery are replaced with an			
incorrect type. Dispose of used batteries			
according to the instructions.			
\square Do not touch charging device, power cord, or	Λ		
AC socket with wet hands. This may cause	773		
electric shock or equipment failure.			
☐ Do not apply a strong impact to the Main	Δ		
Battery or charging devices. This may cause	160-1		
equipment failure, damage, or bodily injury.			
☐ Do not place the devices on an unstable	\triangle		
surface, otherwise it may fall and cause injury	<u> </u>		
or equipment failure.			
☐ Do not apply strong shock or long-term			
oscillations.			
This may cause equipment failure.			
\square If you do not use it for long term, remove the			
Main Battery, Sub Battery and RTC Battery for			

safety.		
☐ Do not apply strong impact to the Main Battery	A	
or charging devices. Otherwise, this may result	<u> </u>	
in battery explosion, fire, or equipment		
failure.		
☐ Keep the devices away from direct sunlight or	Δ	
high temperatures. This may cause overheat,	<u> </u>	
burst, or reduced life and performance.		
\square Operation is subject to the following two		
conditions:		
(1) this device may not cause interference, and		
(2) this device may be subject to interference,		
including interference that may cause undesired		
operation of the device.		

FCC WARNING

Changes of modifications not expressly approved by the party responsible for compliance could void the user's authority to operate

NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. 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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at

The available scientific evidence dose 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 Mobile Terminal (S1596-01) has been tested and found to comply with the Federal Communications Commission (FCC) guidelines on radio frequency energy (RF) exposures. The maximum SAR levels tested for the Mobile Terminal (S1596-01) has been shown to be 0.608 W/kg at body.

This device should be co-located or operated with any other antenna or transmitter.

This class [A] digital apparatus complies with Canadian ICES-003. Cet appareil numerique de la classe[A] est conforme a la norme NMB-003

The installer of this radio equipment must ensure that the antenna is located or pointed such that is does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website www.hc-sc.gc.ca/rpb

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1. System Overview

1.1 Part Names

■ System for Using Mobile Terminal (MT)

* Used equipment is different Single Docking Station (SDS) depending on the specification.

S1596-03

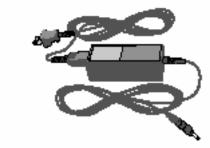
Mobile Terminal (MT) S1596-01



Main Battery S1596-05



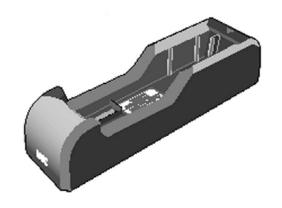
AC Adapter S1596-04



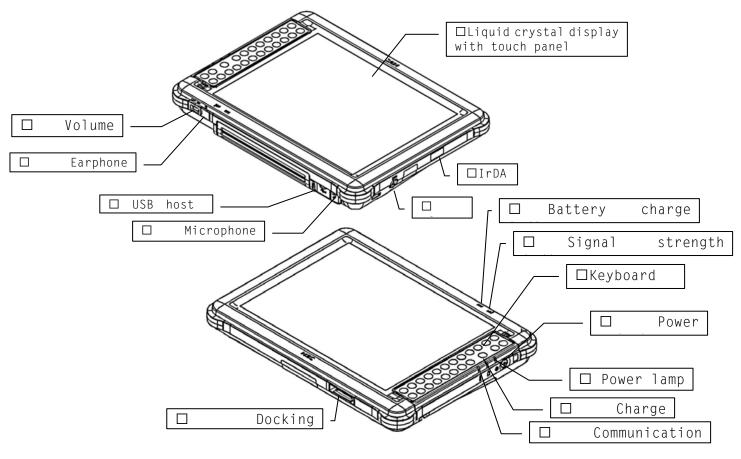
Dual Charging Station (DCS) S1596-06



SBC (Single Battery Charger) S1596-02



◆ MT Part Names (Front View)



1. Liquid crystal display with touch panel



2. Volume dial 3□Earphone Jack 4. USB host 5□Microphone Jack 6□IrDA 7□DC-IN



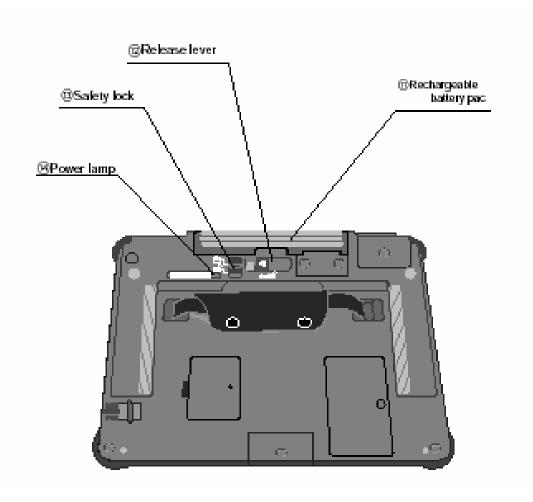
- 8. Keyboard
- 9. Battery charge indicator
- 10. Signal strength indicator
- 11. Power switch
- 12. Power lamp
- 13. Charge lamp
- 14. Communication lamp
- 15. Docking Interface

- \square Displays operation contents and instructions.
 - Operation is done with the touch-key (using fingers). Do not press the display firmly or with sharp elements such as pens. This may damage the display.
- \square Adjusts the volume.
- □ Monaural Jack 3.5□
- □ Ver2.0
- ☐ Monaural Jack 3.5☐
- □ SIR
- \square For charge MT from AC Adapter
- This terminal is only for S5196-04(AC ADAPTER).
- \square The keys are used for operating the device.
- ☐ Indicates the remaining Main Battery charge in 3 levels.
- \square Indicates the radio signal strength in 3 levels.
- \square Turns ON/OFF the power.
- \square Turns on when the power is turned on.
- \square Indicates the charging status.
- \square Indicates the software (API control) status.
- \square Supplies charging current to the MT when inserted in the Dual Charging Station (S1596-06).

Supplies charging current to the MT and Add USB ports when inserted in the Single Docking Station (S1596-03).

Do not touch the terminal. This may cause damage or failure.





15. Rechargeable Main Battery(S1596-05)

 $\hfill\square$ Provides battery power for running the unit.

Make sure your fingers/hand are not caught when

This terminal is only for Main Battery (\$5196-01).

 \square Furthermore, do not touch the terminal. This may



16. Release lever

17. Safety lock

cause failure. \square Releases the Main Battery (S1596-05).

placing the Main Battery (\$1596-05).

Do not use other batteries.

Releases the Main Battery (S1596-05). Move the safety lock to remove the Main Battery (S1596-05).

If moved with the MT powered on, a warning buzzer goes on.

 \Box Do not change Main Battery (S1596-05) with the MT powered on (with the power lamp ON). This may cause failure.

The lamp turns on when the power is turned on.

Δ

18. Power lamp

□□ Hardware Specification 2.1 Hardware Specification

	· ' '	
	CPU	Intel PXA270 520MHz Processor
	ROM	64MB
Unit	RAM	128MB
	Storage	128MB (CF Card□(1MB =1000,000bytes)
	Method	10.4-inch XGA TFT LCD Display (w/ Backlight)
	Resolution	1024 X768
Display	Color	65536 colors
	Graphics	800X600 can be displayed as 1024X768 by stretch function.
	Touch	Analog Resistive
	Screen	⚠ When you operate the MT with touch screen, fingertip or the stylus.
Input		The stylus pen is included in accessory.
	Keyboard	Numeric and Functional Keypad (23 keys) O□9□PU□PD□□□□□F1□3□Home□Help□Enter□CLR□Tab□ Exit
	Switch	Power, Volume, Reset, Battery Lock
Sound		Monaural Speaker
Interface	CF Card	Type□x 1□used for Storage□
	Wireless LAN	IEEE 802.11b/g (Compliant)
	Bluetooth	Version 1.2; Support Profile: Serial Profile *Note 1
	USB Host	USB ver2.0: 1Port One Type-A Connector; Support Device: Mouse, Keyboard
	IrDA	SIR
	Docking Interface	Single Docking Station / Dual Charging Station
Interface	Jack	Monaural 3.5□
	Microphone Jack	Monaural 3.5□
	Battery	Main Battery: Lithium-Ion Smart Battery Sub Battery: Ni-H Battery RTC Battery: MnCO2-Lithium Backup Battery
Power	Battery Life	Based on actual store operations
	Recharge Time	Main Battery Recharge Time: Approx. 2.5 hours□MT is suspend□

	(In Operation)
	$0\sim40^{\circ}$ \square (32 \sim 104 F), 35 \sim 85% \square No condensation
Temperature/	or frosting)
Humidity range	(Storage)
	$-10 \sim 60 \square (14 \sim 140 \text{ F})$, $\square 10 \sim 85\%$ (No condensation
	or frosting)
	- Main Battery Remaining Level Indicator
	(Displays level of
	remaining Main Battery)
	- Signal Strength Level Indicator (Displays
	signal level
	of Radio)
	- Power Indicator (Displays power on/off status)
	- Recharging Indicator (Displays recharging of
LED	Main
LED	Battery)
	- Communication Status Indicator (Displays
	communication
	status by AP control)
	- Main Battery Lock Indicator (Displays
	lock/unlock of Main
	Battery)
	For further details, please see "2.2 LED
	Indicators."
Dimensions	288 x 214 x 26 □Max. 39) mm
Weight□including	2.2 lb. (To be confirmed; w/o hand strap and
Batterys)	shoulder belt)
	Stylus Pen x 1, Hand Strap x 1, Shoulder Belt x
	1, Main Battery x 1, Sub Battery x 1, RTC Battery
	x 1(Installed), ID Label x 1
	$\Box 1$ Shoulder belt and batteries are individually
Accessories	packaged
	in the same box from the factory shipment.
	\square 2 We recommend stylus pen should be positioned
	in the
	stylus pocket on the shoulder belt at all
	times.

*Note 1: The Bluetooth word mark and logos are owned by the Bluetooth SIG, Inc.

and any use of such marks by [licensee name] is under license. Other trademarks and trade names are those of their respective owners.

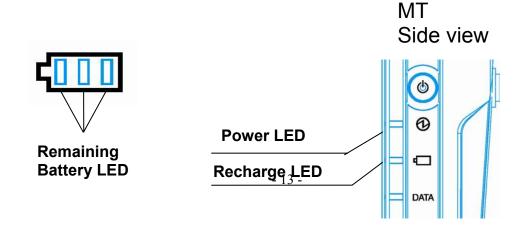
2.2 LED Indicator

		Remaining Level[%]	Remaining Main Battery LED Indicator (□GREEN)	Power LED Indicator	Recharge LED Indicator *4
Powe	AC Adapter not	100□70		GREEN	OFF
r ON	connected	69□39		GREEN	OFF
	(Main Battery	38□ 8		GREEN	OFF
	-Operated)	7□ 4 *1		ORANGE	OFF
		3□ 0 *2		0FF	OFF
	AC Adapter	100□96		GREEN	GREEN
	Connected *3	95□70		GREEN	ORANGE
		69□39		GREEN	ORANGE
		38□ 8		GREEN	ORANGE
		7 🗆 4		GREEN	ORANGE
		3□ 0		OFF	ORANGE
	'	Main Battery Removed		OFF	OFF
	AC Adapter Not connected	100□ 0		0FF	OFF
	AC Adapter	100□96		OFF	GREEN
	Connected *3	95 🗆 0		OFF	ORANGE

- *1 Displays a message for Main Battery exchange.
- *2 At 3% remaining level, Suspend mode is enforced by system. MT cannot be resumed until Main Battery charge is 4% or more.
- *3 This is also applicable to the MT on the Single Docking Station (S1596-03)

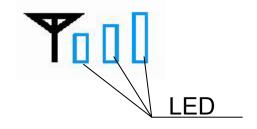
or Dual Charging Station (S1596-06) that is power "On." MT begins to charge a Main Battery when level is 95% or less.

*4 ORANGE blinking shows error in recharging process.



□Signal Strength Level LED Indicator

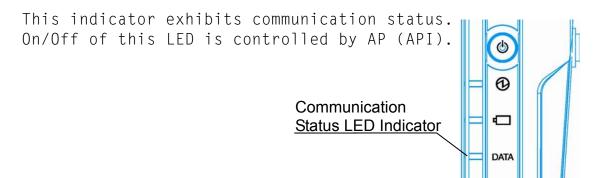
	Signal Strength Level (□Green)
Excellent	
Good	
Poor	
No Signal	



□Battery Lock LED Indicator

This indicator works exactly as same as the Power LED Indicator. This indicator is used for Main Battery exchange.

□Communication Status LED Indicator



2.3 Switches

Power	This is used to suspend and resume the MT. "Suspend and resume"				
Switch	means "power on and off" from the user's perspective. As the data has to be retained for successive and continued operations, the				
	MT is not "turned off" in suspend mode but simply with the screen turned off.				
	Note: MT cannot be resumed if a Main Battery charge is under 4%. Charge				
	Main Battery or exchange it to a charged Main Battery. And, If the Battery Lock Switch remains in its OFF position, the MT cannot be resumed even if Power switch is pushed.				
Reset Switch	This is used to reboot the MT (Cold Boot). All retained data without CF storage card is lost and the system is initialized.				
Sound Volume Switch	This is used to control the audio volume. The sound volume cannot be controlled by application.				
Battery Lock Switch	This is used to secure Main Battery exchange. Please see battery exchange steps in the following page.				

- 2.4 Battery Exchange Steps and Instructions
 - 1) Please make sure the MT is suspended before removing the Main Battery.

There is possibility of losing data if you remove the Main Battery suddenly without

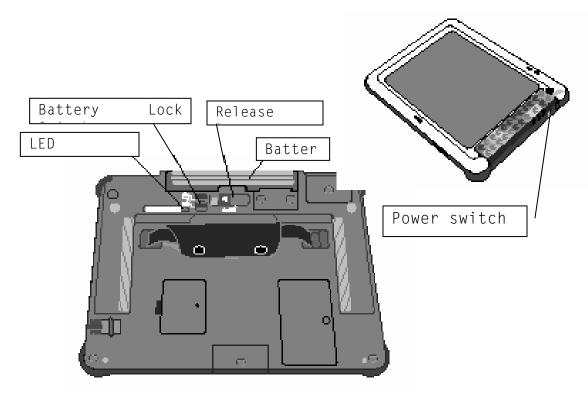
suspending the MT first (power-off). Data in MT may be lost if the Main Battery is

removed for a while. If Main Battery is removed, please mount quick new Main Battery.

- 2) Step#1 Suspend the MT (Power-Off) (Make sure Battery Lock LED Indicator is OFF.)
 - #2 Battery Lock Switch OFF
 - #3 Exchange the Main Battery
 - #4 Battery Lock Switch ON
 - #5 Resume the MT (Power-On)
- 3) Battery exchange requires Battery Lock Switch to its off position. Please make sure the Battery Lock LED Indicator is OFF before you move the Battery Lock Switch to its OFF position. When the MT is suspended, the indicator turns off.
- 4) The alarm beeps and the MT is automatically go into suspended mode if you move the Battery Lock Switch to its OFF position without suspending the MT. If the Main Battery is removed too quickly, the data may be lost before the MT completes its suspension process.
- 5) If the Battery Lock Switch remains in its OFF position, the MT cannot be resumed even if

Power switch is pushed.

 $\label{eq:please make sure the Battery Lock Switch is at its ON position before using the MT. \\$



elec **A** shock,

Do not use the one other than Main Battery (\$1596-05). This may cause book.

fire, or equipment failure.

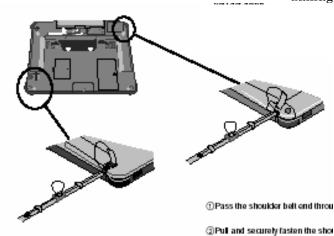
Note: When dispose Main Battery, please contact to help desk or follow the indication of

the Government or a state.

2.5 How to attach the shoulder belt

Do not forget to attach the shoulder belt to avoid damage due to fall.

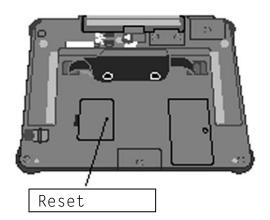
(The MT may hit the floor when you get down. Be careful not to damage the device. (Use the shoulder belt crossed to avoid damage.)



- 1. Pass the shoulder belt end through the holder hole.
- 2. Pull and securely fasten the shoulder belt.

2.6 The Reset switch

□Reset switcl

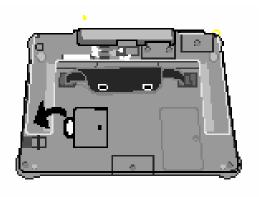


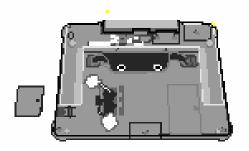
MT is equipped with a reset switch.

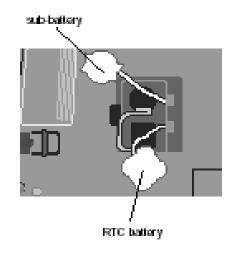
Press the switch to reset.
<Note>

- Do not use the reset switch except in emergencies.
- □Pressing the reset switch initializes the main memory and restarts the system.
- \square When press the reset switch use the attached stylus pen.

2.7 Sub Battery and RTC Battery







The MT is equipped with built-in Sub Battery and RTC Battery.

- * Do not touch the Sub Battery or RTC Battery except when necessary.
- How to open the battery cover

The battery cover can be opened using a coin.

Insert a coin in the battery cover slot to open.

- <Note>
- When closing the battery cover, make sure to place the nails correctly in the slots.
- How to replace the Sub Battery and the RTC Battery.

Caution

Make sure the Main Battery is in place before trying to replace the Sub Battery or the RTC Battery.

- 1. Turn off the power and confirm that the power lamp is OFF.
- 2. Open the battery cover.
- 3. Replace the target battery.
- 4. Close the battery cover.
- 5. Turn on the power. (Confirm that the power lamp turns on.)



 $\mathbf{\Lambda}$

onot use the one other than specify Sub Battery (858-830037-001-) and RTC Battery(858-830043-001-). This may cause electric shock, fire, or equipment failure.

Note: When dispose RTC Battery and Sub Battery, please contact help desk or follow the indication

of the Government and a state.

3. Charging

Methods for charging the MT (Mobile Terminal) S1596-01 are the following four:

- 1. With AC Adapter (S1596-04)
- 2. With SDS (S1596-03)
- 3. With DCS (S1596-06)
- With SBC (S1596-02) 4.

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Don't use other way for charging. This may cause electric shock,

equipment failure.



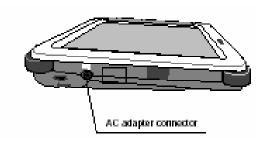
* Always charge the MT before using it for the first time.



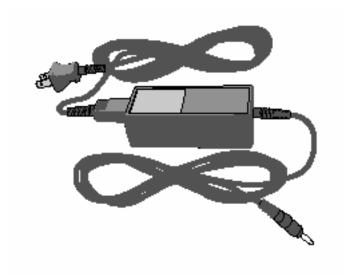
Make sure to use the special A rechargeable Main Battery (S1586-05) for this product.

Using other rechargeable battery pack may result in damage or failure.

3.1 Charging with AC Adapter



• Plug the AC adapter into the MT. Confirm that the MT charging lamp turns on (becomes orange). When charging is complete, the charging lamp changes to green.



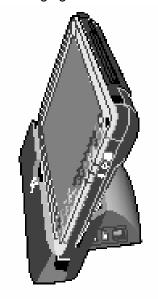
* If the charging lamp does not turn on:

Check that the AC adapter is correctly inserted in the MT connector.

⚠ Make sure to use the special AC adapter (S1586-04) for this product.

Using other AC adapter may result in damage or failure.

3.2 Charging with SDS



- Insert the MT into the SDS.

 Confirm that <u>MT presence lamp on</u> SDS turns on as well as the MT charging lamp (becomes orange).

 When charging is complete, the MT charging lamp changes to green.
- * If the charging lamp does not turn on: Check that the MT is correctly inserted in the SDS.
- * MT can still be used as handy terminal even when inserted in the SDS (that is, even while being recharged).

Make sure to use the special AC adapter (S1586-04) for this product. Using other AC adapter may result in damage or failure.

$\square 3.3$ Charging with DCS



- Before starting recharge, confirm that the DCS power lamp is ON. If not, turn on the power switch.
- With DCS, you may put the MT itself or the

Main Battery (S1596-05) for recharge.

1. Recharging the MT

- Plug the MT charging terminal into the DCS charging terminal. Confirm that the MT charging lamp turns on (becomes orange). When charging is complete, the charging lamp changes to green.
- * If the charging lamp does not turn on: Check that the MT charging terminal is correctly plugged into the DCS charging terminal.

▲ Make sure to use the special rechargeable Terminal(S1586-01) for this product.

Using other Terminal may result in damage or failure.



2. Charging the Main Battery

• Insert the Main Battery into the DCS charging terminal.

Confirm that the DCS charging lamp turns on (becomes orange).

When charging is complete, the charging lamp changes to green.

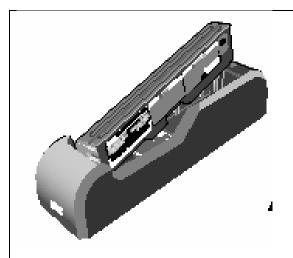
* If the charging lamp does not turn on: Check that the Main Battery charging terminal is correctly plugged into the DCS charging terminal.

▲ Make sure to use the special Main Battery (S1586-05) for this product.

Using other rechargeable battery pack may result in damage or failure.

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\square 3.4 Charging with SBC



• Insert the Main Battery into the SBC charging terminal.

Confirm that the SBC charging lamp turns on (becomes orange).

When charging is complete, the charging lamp changes to green.

* If the charging lamp does not turn on: Check that the Main Battery charging terminal is correctly plugged into the SBC charging terminal.

Make sure to use the special Main Battery (S1586-05) for this product. Using other rechargeable battery pack may result in damage or failure. Make sure to use the special AC Adapter (S1586-04) for this product. Using other AC Adapter may result in damage or failure.

- 4. Miscellaneous
- 4.1 Notes

Notes

- 1. No part of this manual may be reproduced in any form without prior permission.
- 2. The contents of this manual are subject to change without prior notice.
- 3. Please contact your nearest sales representation office if you feel that any corrections or clarifications should be made to the contents of this manual.
- 4. Please contact your nearest sales representation office for replace if your manual has pages missing or in disorder.

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