

# IMPRES™ Adaptive Multi-unit Charger

## Accessories



- EN** Adaptive Multi-Unit Charger
- DE** Mehrfach-Rekonditionierungs-ladegerät
- FR** Chargeur Conditionneur Multiple
- ES** Cargador adaptable múltiple
- PR** Carregador auto adaptável múltiplo
- IT** Caricatore adattivo a più unità
- NL** Adaptieve meervoudige lader
- RU** Адаптивное многоемное зарядное устройство
- CZ** Adaptivní vícečlánkovou nabíječku



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This accessory manual is applicable to the following IMPRES Universal Multi-Unit chargers:

WPLN4108, WPLN4109, WPLN4110, WPLN4118, WPLN4119, WPLN4120, WPLN4121, WPLN4123, WPLN4130, WPLN4131, WPLN4132, WPLN4133, WPLN4134, WPLN4135, WPLN4136

Additionally, this manual includes the following IMPRES Universal Multi-Unit chargers that are available for the GP Professional Series radios:

WPLN4144, WPLN4145, WPLN4146, WPLN4187, WPLN4188, WPLN4189, WPLN4190, WPLN4191, WPLN4192, WPLN4193, WPLN4194, WPLN4195, WPLN4196, WPLN4204, WPLN4205

'Universal' denotes that the charger supports multiple radio models and, through the use of battery adapters, all batteries listed in tables 1 - 6 inclusive.

# IMPORTANT SAFETY INSTRUCTIONS

## SAVE THESE INSTRUCTIONS

This document contains important safety and operating instructions. Please read these instructions carefully and save them for future reference.

Before using the battery charger, read all the instructions and cautionary markings on (1) the charger and (2) the battery (3) and on the radio using the battery.



### WARNING

1. To reduce risk of injury, charge only the rechargeable Motorola authorized batteries listed in Tables 1 through 5. Other batteries may explode, causing personal injury and damage.

2. Use of accessories not recommended by Motorola may result in risk of fire, electric shock, or injury.
3. To reduce risk of damage to the electric plug and cord, pull by the plug rather than the cord when disconnecting the charger.
4. An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in risk of fire and electric shock. If an extension cord must be used, make sure that the cord size is 18AWG for lengths of up to 100 feet (30.48m), and 16AWG for lengths up to 150 feet (45.72m).
5. To reduce risk of fire, electric shock, or injury, do not operate the charger if it has been broken or damaged in any way. Take it to a qualified Motorola service representative.
6. This unit is repairable. Each pocket is powered by a unique printed circuit board & power supply. The PCB / power supply can be purchased from the Aftermarket / Parts organization. The PCB replacement part number is RLN5325. No other component level replacement parts are available. A service manual describing the replacement process can also be ordered from the Aftermarket / Parts organization. The Service Manual Number is 6880309L66.
7. To reduce risk of electric shock, unplug the charger from the ac outlet before attempting any maintenance or cleaning.

## OPERATIONAL SAFETY GUIDELINES

- Turn the radio off when charging the battery.
- This equipment is not suitable for outdoor use. Use only in dry locations/conditions.
- Connect equipment only to an appropriately fused and wired supply of the correct voltage (as specified on the product).
- Disconnect from line voltage by removing the mains plug from the outlet.
- The socket outlet to which this equipment is connected should be close and easily accessible.
- For equipment using fuses, replacements must comply with the type and rating specified in the equipment instructions.
- Maximum ambient temperature around the charger must not exceed 40°C (104°F).
- Make sure the cord is located where it will not be stepped on, tripped over, or subjected to water, damage, or stress.
- This unit utilizes the same wall mount unit as the NTN4796 Multi Unit Charger. The wall mount part number is NLN7967.
- For fuse replacement, use only fuses of the same type and rating listed on the charger label. The following parts can be ordered from your local Parts / Aftermarket facility:

Fuse	6571489S01
Holder	0987626G01
Cover	0987739G01

## IMPRES FEATURE / BENEFIT DESCRIPTION

The IMPRES energy solution is an advanced Tri-Chemistry energy system developed by Motorola which encompasses (a) IMPRES batteries, (b) the IMPRES Adaptive Multi-Unit Charger, and (c) radio hardware / software which provides the capability for IMPRES compatible radios to communicate with IMPRES batteries (not applicable for GP Professional Series radios).

The IMPRES Adaptive Multi-Unit Charger, when used in conjunction with Motorola IMPRES batteries will:

- maximize operation time between charge cycles by automatically eliminating memory effect
- maximize battery life by significantly reducing heat during the trickle and post charge cycles
- eliminate the need to purchase reconditioning equipment and train personnel to “manage battery maintenance tasks.”

With this unique patented system approach, there is no need to track and record battery use, conduct manual reconditioning cycles or remove batteries from chargers following charging.

The IMPRES Adaptive Multi-Unit Charger monitors the usage pattern of the IMPRES batteries, stores that information in the IMPRES batteries, and performs a recondition cycle only when needed.

The IMPRES Adaptive Multi-Unit Charger will not overheat the batteries regardless of how long the batteries are left in the charger pockets. The charger monitors the batteries and automatically “tops off” the batteries, as required.

The IMPRES Adaptive Multi-Unit Charger simplifies the charging and battery care process: **Just follow these simple steps:**

- 1. Place the radios / batteries into the charger pockets.**
- 2. Remove the radios / batteries when fully charged!**

Motorola is the only manufacturer that offers a conditioning or reconditioning charger that provides users with the choice of charging the radios with the batteries attached or the batteries separately.

## OPERATIONAL CHARACTERISTICS / DIFFERENCES:

1. IMPRES batteries may be charged in conventional chargers. However, in order for the Smart Energy features to be enabled, IMPRES batteries must be charged in the IMPRES Adaptive Multi-Unit Charger. The first time an IMPRES battery is charged in an IMPRES Adaptive Multi-Unit Charger, the charger initially indicates a **STEADY YELLOW** on the charger indicator. This first charge must be allowed to complete to a **STEADY GREEN** indication on the charger indicator. This properly calibrates the IMPRES battery and enables the Smart Energy features. If this process is interrupted, the charger will calibrate the battery upon the next insertion.
2. Since the IMPRES Adaptive Multi-Unit Charger automatically determines the conditions necessary to recondition an IMPRES battery, the charger may go into recondition mode when a radio or battery is inserted. This is indicated by a **STEADY YELLOW** on the charger indicator. The recondition mode can be over ridden, if required, by removing and reinserting the radio or battery. (Please see instructions later in this guide.)
3. The IMPRES Adaptive Multi-Unit Charger is designed to charge any battery listed in Tables 1 through 6. However, only genuine IMPRES batteries will provide Smart Energy features.
4. The IMPRES Adaptive Multi-Unit Charger must be used to calibrate IMPRES Smart batteries to ensure they accurately record, store and display IMPRES battery usage data.

5. If an IMPRES battery is used with a display radio (e.g. XTS5000), the radio may display an icon indicating the charge status of the battery. This icon is enabled after an IMPRES battery has been calibrated in an IMPRES charger. The charger status icon will remain displayed as long as the user continues to use IMPRES chargers to charge the batteries. However, if an IMPRES battery is charged in a non-IMPRES charger for a period of 7 days (or more), the icon will disappear. To re-enable the icon, insert an IMPRES battery into an IMPRES charger and allow it to complete the charging process (resulting in a **STEADY GREEN** indication). The charge status icon will then be displayed on the radio. If the icon does not appear after a full charge, place a partially discharged battery (at least 70% discharged) into the charger, initiate a reconditioning, and allow it to complete the charging process. The icon will then appear on the radio display (not applicable to GP Professional Series radios).
6. The IMPRES Adaptive Multi-Unit Charger can only be repaired by a qualified service technician authorised by Motorola CGISS. Any violation of this policy can void unit warranty.



## BATTERY LISTS

The following tables list the batteries that can be used with the specific subscriber radios identified in the table headings.

**Table 1. ASTRO XTS3000 / XTS3500 / DiMetra Series Radios & ASTRO XTS5000 Digital Radio**

Kit (PN)	Chemistry	FM	Smart	Capacity	New Model
HNN9031	NiCD	No	Yes	Ultra High	No
HNN9032	NiCD	Yes	Yes	Ultra High	No
NTN8294	NiCD	No	No	Ultra High	No
NTN8295	NiCD	Yes	No	Ultra High	No
NTN8297	NiCD	Yes	No	Ultra High	No
NTN8299	NiCD	Yes	No	Ultra High	No
NTN8610	Lilon	No	No	High	No
NTN8293	NiMH	No	No	Ultra High	No
NNTN4435	NiMH	No	Yes	Ultra High	No
NNTN4436	NiMH	Yes	Yes	Ultra High	No
NNTN4437	NiMH	Yes	Yes	Ultra High	No
RNN4006	NiMH	No	No	Very High	New
RNN4007	NiMH	Yes	No	Very High	New
NTN9862	Lilon	No	Yes	Ultra High	New

**Table 2. ASTRO XTS2500 Digital Radios**

Kit (PN)	Chemistry	FM	Smart	Capacity	New Model
NTN9859	NiMH	No	No	Ultra High	New
NTN9857	NiMH	Yes	No	Ultra High	New
NTN9815	NiCD	No	No	High	New
NTN9816	NiCD	Yes	No	High	New

**Table 3. MTP700 Digital Radios**

Kit (PN)	Chemistry	FM	Smart	Capacity	New Model
PMNN4048*	NiMH	No	Yes	High	New
PMNN4049*	NiMH	Yes	Yes	High	New
PMNN4050*	Lilon	No	Yes	High	New
PMNN4047*	Lilon	No	Yes	High	New

\* Universal Charger requires battery adapter part number RLN5212 to charge MTP700 batteries.

**Table 4. HT1000 / MT2000 / MTS2000 / MTX8000  
& MTX9000 Jedi Series Radios**

Kit (PN)	Chemistry	FM	Smart	Capacity	New Model
HNN9028	NiCD	No	Yes	Ultra High	No
HNN9029	NiCD	Yes	Yes	Ultra High	No
NTN7143	NiCD	No	No	High	No
NTN7144	NiCD	No	No	Ultra High	No
NTN7146	NiCD	Yes	No	High	No
NTN7147	NiCD	Yes	No	Ultra High	No
NTN7148	NiCD	CENELEC	No	High	No
NTN7149	NiCD	CSA	No	High	No
NTN7150	NiCD	MSHA	No	High	No
NTN7341	NiCD	Yes	No	Ultra High	No
NTN7372	NiCD	Yes	No	High	No
WPPN4013	NiMH	No	No	Ultra High	No
WPPN4037	NiMH	Yes	No	Ultra high	No
RNN4008	NiCD	ATEX	No	High	No

**Table 5. Saber / Astro Saber/ SSE5000 / MX1000 Radios**

Kit (PN)	Chemistry	FM	Smart	Capacity	New Model
HNN9033	NiCD	No	Yes	Ultra High	No
HNN9031	NiCD	Yes	Yes	Ultra High	No
NTN4537**	NiCD	Yes	No	Low	No
NTN4538	NiCD	Yes	No	High	No
NTN4592**	NiCD	No	No	Low	No
NTN4593	NiCD	No	No	High	No
NTN4595	NiCD	No	No	Ultra High	No
NTN4596	NiCD	Yes	No	Ultra High	No
NTN4657	NiCD	No	No	High	No
NTN4671	NiCD	CENELEC	No	High	No
NTN4992	NiCD	Yes	No	Ultra High	No
NTN7014**	NiMH	No	No	High	No
NTN7058	NiCD	Yes	No	Ultra High	No
NTN7426	NiCD	Yes	No	Low	No
NTN8251	NiMH	Yes	No	Ultra High	No
NTN8818**	Lilon	No	No	High	No

\*\*Universal Charger requires battery adapter part number 4385922B01 to charge Astro Saber batteries.

**Table 6. GP Professional Series Radios**

<b>Kit (PN)</b>	<b>Chemistry</b>	<b>FM</b>	<b>Smart</b>	<b>Capacity</b>	<b>New Model</b>
HNN9003	NiMH AA Bluetooth	No	No	High	No
HNN9008	NiMH	No	No	High	No
HNN9009	NiMH	No	No	Ultra High	No
HNN9010	NiMH	Yes	No	Ultra High	No
HNN9011	NiCD	Yes	No	High	No
HNN9012	NiCD	No	No	High	No
HNN9013	Lilon	No	No	High	No
WPNN4045	NiMH	No	No	High	No
PMNN4045	NiMH	No	No	High	No
HNN4001	Impres NiMH	No	Yes	Ultra High	Yes
HNN4002	Impres NiMH	Yes	Yes	Ultra High	Yes
HNN4003	Impres Lilon	No	Yes	Ultra High	Yes

Universal Charger requires battery adapter part number RLN5648.

**NOTE:**

Adapters can be purchased from a radio sales or Aftermarket sales team representative.

## POWER SOURCES AND MOTOROLA AUTHORIZED POWER ADAPTERS

This charger is designed for use in 100 V ac to 240 V ac, 50/60 Hz applications and uses the following Motorola power cords shown in Table 7. Power cords used with the charger for GP Professional Series radios are listed in Table 8:

**Table 7. Motorola Universal Model Power Cords**

Plug Type	Charger Kit	Charger Kit (Display Model)	Power Cord
No Power cord / plug	WPLN4121	WPLN4127	None
U.S./NA	WPLN4108	WPLN4130	3087791G01
Euro	WPLN4109	WPLN4131	3087791G04
U.K.	WPLN4110	WPLN4132	3087791G07
Australia/New Zealand	WPLN4118	WPLN4133	3087791G10
Argentina	WPLN4119	WPLN4134	3087791G13
U.S./NA	WPLN4120	WPLN4135	3087791G01
Korea	WPLN4123	WPLN4136	3087791G16

**Table 8. Motorola GP Professional Series Model Power Cords**

Plug Type	Charger Kit	Charger Kit (Display Model)	Power Cord
No Power cord / plug	WPLN4197	WPLN4198	None
U.S./NA	WPLN4187	WPLN4192	3087791G01
Euro	WPLN4189	WPLN4194	3087791G04
U.K.	WPLN4188	WPLN4193	3087791G07
Australia/New Zealand	WPLN4190	WPLN4195	3087791G10
Argentina	WPLN4191	WPLN4196	3087791G13
U.S./NA	WPLN4205	WPLN4204	3087791G01
Korea	WPLN4146	WPLN4145	3087791G16

## OPERATING INSTRUCTIONS

### NOTES

The IMPRES Multi-Unit Adaptive Charger charges only the Motorola authorized batteries listed in Tables 1 through 6. Other batteries may not charge.

The IMPRES Multi-Unit Adaptive Charger has automatic features and capabilities that are different from other battery chargers. Pay close attention to the charge indicator to ensure that the charger is in the desired/expected mode of operation.

The charger pockets accommodate either a radio with a battery attached or a battery alone. **Prior to charging a radio with a battery, turn the radio off.** Batteries charge best if they are at room temperature when charged.

1. Plug the charger end of the power cord into the ac receptacle located at the back of the charger.
2. Plug the wall receptacle end of the power cord into the appropriate ac outlet. A successful power-up sequence is indicated by a **SINGLE FLASH GREEN** on the charger indicator.
3. Insert a battery, or radio with a battery (**radio turned off**), into a charger pocket by:
  - a. aligning the groove on each side of the battery with the corresponding raised rail on each side of the charger pocket
  - b. pressing the battery toward the rear of the pocket
  - c. sliding the battery into the charger pocket, ensuring complete contact between the charger and battery contacts.

Once a battery is properly seated into a charger pocket, the charger indicator illuminates, indicating the charger has recognized the presence of a battery. Refer to the charging indicators in Table 9

**Table 9. Charging Indicators**

<b>Charge Indicator</b>	<b>Description</b>
<i>Single Flash Green</i>	Charger has successfully powered up.
<i>Steady Red</i>	Battery is in rapid charge mode.
<i>Flashing Green</i>	Battery has completed rapid charge (>90% available capacity). Battery is in Top-Off charge (Trickle charge).
<i>Steady Green</i>	Battery has completed charging and is fully charged.
<i>Flashing Yellow</i>	Battery is recognized by charger but is waiting to charge. (Either the battery voltage is too low or the battery temperature is too low or too high to allow charging. When this condition is corrected, the battery will begin charging.)
<i>Flashing Red</i>	Battery is unchargeable or not making proper contact.
<i>Steady Yellow</i>	<b>(This feature is for Smart batteries only)</b> Battery is in recondition mode. The length of time the charger remains in this mode is dependent upon the state of charge remaining in the battery when inserted. (Fully charged batteries require more time to recondition – 8 hours or more - than fully discharged batteries.)
<i>Flashing Red/Green</i>	<b>(This feature is for Smart batteries only)</b> Battery has completed charging and is fully charged. Battery continues to be usable, but may be nearing the end of its rated service life.

**NOTE**

The IMPRES Adaptive Multi-Unit Charger is unique in that it has the ability, when used with Motorola IMPRES batteries, to automatically determine the need of the batteries to be reconditioned.

In order for the features of Motorola Smart batteries and the Adaptive Charging System to be fully available, the data contained in Motorola Smart batteries must be initialized by the charger the first time it is charged. This process is indicated by a **STEADY YELLOW** on the charger indicator (the same as though the battery were reconditioning). The process is automatic, includes an initial reconditioning of the battery, and begins charging upon completion of this process. This process requires time to initialize the battery, so the battery should be left in the charger overnight on the initial insertion.

The IMPRES Adaptive Multi-Unit Charger operates both as:

- a **Charger** with all Motorola authorized batteries, and
- a **Reconditioner** with Motorola authorized IMPRES batteries.

### ***Charging the Batteries***

#### **IMPORTANT:**

The charger pockets are designed to accept several different battery shapes and sizes, so it is important to make certain that a radio with a battery attached or a battery alone is inserted correctly. If a radio with a battery attached or battery alone is inserted incorrectly, the indicator will not illuminate, indicating that the battery is not being charged.

#### **NOTE:**

New batteries (never used before) prematurely indicate a full charge in some cases (**STEADY GREEN** indication)

To ensure optimum performance, Motorola recommends all new batteries be left in the charger 14 to 16 hours prior to initial use.

1. Once a battery or radio with a battery is properly inserted into a charger pocket, the charger begins to rapidly charge the battery and is indicated by a **STEADY RED** on the charger indicator. The length of time the charger indicates a **STEADY RED** is dependent upon the charge remaining in the battery.
2. Completion of rapid charge (>90% available capacity) is indicated by a **FLASHING GREEN** on the charger indicator. This indicates the “top-off” charge (trickle charge) and requires approximately 1 hour.
3. Completion of “top-off” charge is indicated by a **STEADY GREEN** on the charger indicators. This indicates a battery is fully charged.
4. Other indications that **may** appear on the charger indicator while charging are:
  - **FLASHING YELLOW** – indicates that either the battery temperature or the battery voltage is out of range for charging. Charging resumes when these conditions have been corrected.
  - **FLASHING RED AND GREEN** – indicates that the battery may be approaching the end of its rated service life. While this battery

*is* fully charged, its charging capacity has been reduced by usage and may not adequately support heavier applications. This feature is available only when used with Motorola IMPRES batteries. This is not a fault indication, merely a notification to the user that a battery may soon no longer be able to yield expected service and may need to be replaced.

- **FLASHING RED** – indicates that the battery is unchargeable. This could be the result of a loss of contact between the battery and the charger’s contacts. Charging resumes when the condition causing this indication is corrected.

Motorola Smart batteries have an internal memory device that is read by the Motorola IMPRES Adaptive Multi-Unit Charger. If an IMPRES battery is charged for more than 2-1/2 minutes, the IMPRES Adaptive Multi-Unit Charger retains the serial number of the IMPRES battery. The IMPRES battery may be removed from the charger for up to 30 minutes. Once the battery is reinserted back into the charger, it will resume the charging process from that point from when the battery was first removed.

### ***Manually Reconditioning the Batteries***

Within 2-1/2 minutes of the initial insertion of an IMPRES battery (**STEADY RED** indication), remove and reinsert the battery within 5 seconds to manually force reconditioning to occur. The charger indicator changes from a **STEADY RED** to a **STEADY YELLOW**. This forces the charger to recondition and automatically recharge the battery.

#### **NOTE:**

Excessive use of this feature may reduce the overall life of the battery.

### ***Automatically Reconditioning the Batteries***

The Motorola IMPRES Adaptive Multi-Unit Charger, when used in conjunction with a Motorola IMPRES battery, has the ability to determine when it is appropriate to recondition the battery.



When an IMPRES battery is properly inserted into the charger, the charger determines if it is appropriate to recondition the battery. If the battery needs reconditioning, the charger automatically indicates a **STEADY YELLOW**. This process may take up to 8 hours or more to complete, depending upon the state of charge and capacity rating of the battery when it is inserted.

**It is important to note, for this process to be effective, the battery must be allowed to complete the recondition/recharge process. Leave the battery in the charger until the charger indicates a STEADY GREEN.**

At the completion of the recondition cycle, the charger automatically recharges the battery.

### ***Manually Terminating the Reconditioning Process***

At any time during the reconditioning process of a Motorola IMPRES battery (**STEADY YELLOW** indication), reconditioning may be terminated by removing and reinserting the battery within 5 seconds. This causes the charger to terminate the reconditioning process and begin the charging process. The charger indicator changes to a **STEADY RED**.

## TROUBLESHOOTING

The IMPRES Adaptive Multi-Unit Charger incorporates the features of:

- a universal input (100 V ac-240 V ac, 50/60 Hz) power supply
- a constant current rapid charger
- an interrupted current (negative pulse) conditioning charger
- a reconditioning unit.

The combination of the features listed above are unique in a desktop charger. Therefore, operation of a radio with a battery attached while in the charger is not recommended.

While in the charger, radio operation can result in minimally reduced radio performance and extended battery charge time.

Towards the end of the rapid charge cycle (**STEADY RED** indication), the battery voltage exceeds the normal operating voltage of the radio. The voltage returns to a normal level following the rapid charge mode or when the battery is removed from the charger.

If a radio is turned on while the charger is in rapid charge mode, the radio becomes temporarily inoperable. This condition can be cleared by removing the radio from the charger and turning the radio off and on again.

During the reconditioning process, the battery becomes fully discharged. As a result, the radio may not function during reconditioning mode.

When troubleshooting, always observe the charge indicator – Refer to Table 9.

**Table 10. Troubleshooting**

Problem	What it means...	What to do...
No charger indication	<ul style="list-style-type: none"> <li>• Charger contact is not being made.</li> <li>• No power to the charger.</li> </ul>	<ul style="list-style-type: none"> <li>• Check that the radio with battery, or the battery alone, is inserted correctly.</li> <li>• Make sure that the power cord is securely plugged into the charger and an appropriate ac outlet, and that there is power to the outlet.</li> <li>• Replace fuse(s).</li> </ul>
Flashing Red Indication	<ul style="list-style-type: none"> <li>• Charger contact is not being made.</li> <li>• Battery is unchargeable.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove the battery from the charger and replace it back into the charger.</li> <li>• Verify that the battery is a Motorola authorized battery listed in Tables 1 through 6. Other batteries may not charge.</li> <li>• Remove power from the battery charger and, using a clean dry cloth, clean the gold metal charging contacts of both the battery and the charger.</li> <li>• Replace battery.</li> </ul>
Flashing Yellow Indication	<ul style="list-style-type: none"> <li>• Battery is waiting to charge. The battery temperature may be below 5°C (41°F) or above 40°C (104°F) or the battery voltage may be lower than the predetermined threshold level for rapid charging.</li> </ul>	<ul style="list-style-type: none"> <li>• When this condition is corrected, the battery will begin charging.</li> </ul>

## SERVICE

The IMPRES Adaptive Multi-Unit Charger can only be repaired by a qualified service technician authorised by Motorola. Any violation of this policy can void unit warranty.

## CHARGERS WITH DISPLAY MODULE (CDM)

The IMPRES Adaptive Multi-Unit Charger can be enhanced with the addition of a charger display module (CDM), Motorola part no. RLN5382.

### *General Display Information*

The IMPRES Adaptive Multi-Unit Charger with CDM provides the user with valuable information while performing battery maintenance and care. The information that the charger displays and the corresponding LED indicators are detailed in the following tables.

#### **Start Up**

##### *Upon Charger Power-up*

LED	SINGLE FLASH GREEN
Line 1	IMPRES
Line 2	

##### *If There is No Battery in the Pocket*

LED	OFF
Line 1	NO BATTERY
Line 2	

##### *Reading Battery Data*

LED	Any Defined Indication
Line 1	READING
Line 2	BATTERY DATA

#### **Non-IMPRES Battery in the Pocket**

LED	Defined by Charge State
Line 1	NON-IMPRES
Line 2	BATTERY

#### **IMPRES Battery in the Pocket**

##### *IMPRES and Software Versions are Displayed*

LED	Defined by Charge State
Line 1	IMPRES
Line 2	SW xx.yy; aa.bb

#### **NOTE:**

xx.yy denotes charger SW version, and aa.bb denotes CDM SW version.

*IMPRES Battery Kit # and Chemistry are Displayed*

LED	Defined by Charge State
Line 1	KIT# -----
Line 2	----CHEMISTRY

*Forecasted # of Cycles Prior to Automatic Recondition*

LED	Defined by Charge State
Line 1	----CYCLES
Line 2	TO RECONDITION

\* Displayed only when the number of cycles to recondition is less than 6.

*Charger Waiting to Charge, Battery is Hot*

LED	Flashing ORANGE
Line 1	WAITING TO CHG
Line 2	HOT BATTERY

*Charger Waiting to Charge, Battery is Cold*

LED	Flashing ORANGE
Line 1	WAITING TO CHG
Line 2	COLD BATTERY

*Charger Waiting to Charge, Low Voltage*

LED	Flashing ORANGE
Line 1	WAITING TO CHG
Line 2	LOW VOLTAGE

**NOTE:**

Not all screens shown above will be displayed. For example, Waiting to Charge displays (battery hot, cold, low voltage) will only be shown if the situation warrants.

*Charger is in Trickle Charge Mode*

LED	Flashing GREEN
Line 1	TRICKLE CHARGE
Line 2	

*Charger is Complete*

LED	Steady GREEN or Flashing RED / GREEN
Line 1	CHARGE COMPLETE
Line 2	

*Charger is in Discharge/Reconditioning Mode*

LED	Steady ORANGE
Line 1	DISCHARGE
Line 2	

*Charger is Calibrating an IMPRES Battery*

LED	Steady ORANGE, Steady RED, & Flashing ORANGE or GREEN
Line 1	Calibrating
Line 2	Battery

LED	Steady GREEN
Line 1	Battery
Line 2	Calibrated

\* All IMPRES batteries should be calibrated before initial use. An IMPRES charger will automatically initiate calibration for all new batteries

*Battery Capacity Data is Displayed as “%” in mA<sub>H</sub>, and Voltage*

LED	Defined by Charge State
Line 1	----% RATED CAP.
Line 2	----mA <sub>H</sub> --.V

*Estimated Time to Rapid Charge  
Complete Displayed in Hours, Minutes for NiCd & NiMH IMPRES  
Batteries Only*

LED	Defined by Charge State
Line 1	RAPID CHG ENDS
Line 2	IN xx HRS, yy MIN

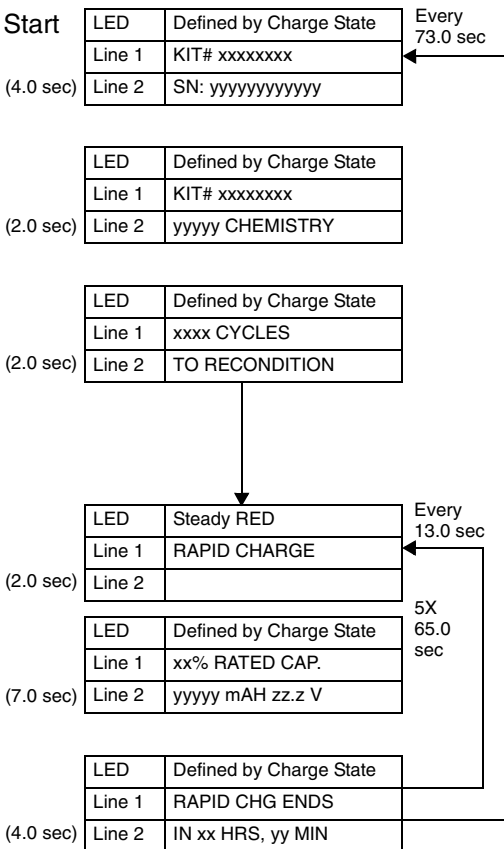
**NOTE:**

- (1) Estimated time to complete charging includes rapid charge and discharge cycles (if applicable).
- (2) Battery capacity information may not be displayed for uncalibrated batteries.
- (3) Use of IMPRES batteries with non-IMPRES chargers can affect capacity and charging time accuracy.

## Sequencing Diagrams for IMPRES Batteries

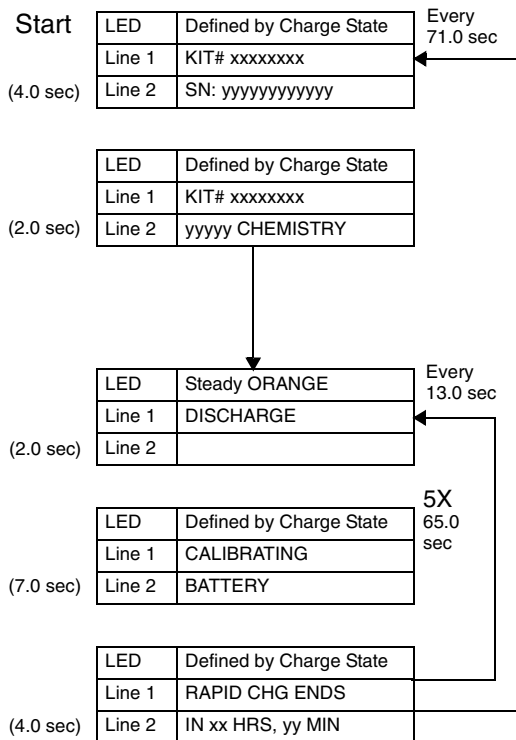
**Note:** These diagrams are the sequences shown in the previous 'General Display Information' and are in English only.

### IMPRES NiCd & NiMH Battery Display Sequence

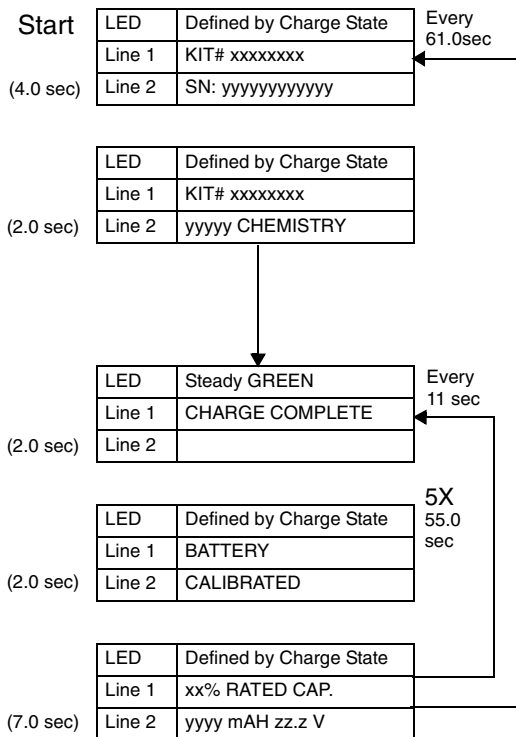




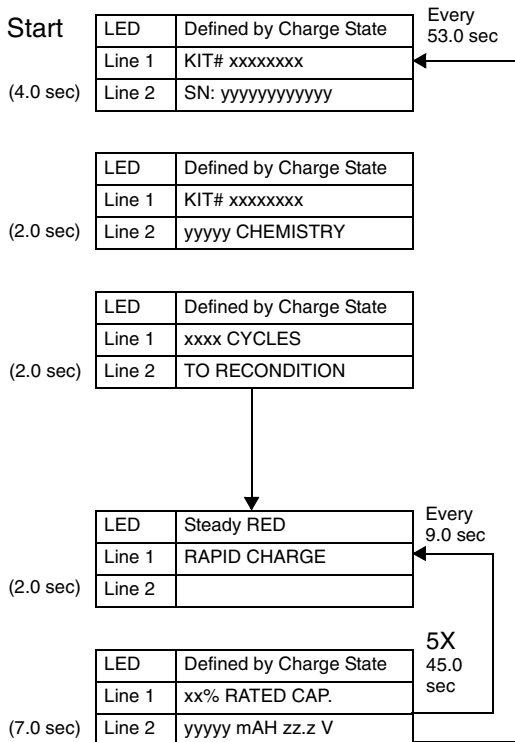
## Before Calibration:



## After Calibration:



## IMPRES Li-Ion Battery Display Sequence



## Before Calibration:

