Automated battery maintenance
Manual tracking and recording of battery use are a thing of the past. IMPRES uses a unique communications protocol to facilitate adaptive reconditioning – the charger evaluates the details of the battery’s usage pattern to determine the optimal reconditioning interval. This automated process works to diminish memory effect and optimize the cycle life of the battery and maximize talk time.

Chargers that communicate
IMPRES multi-unit chargers are available with a two-line display module. Your customers have access to valuable information such as:

- Battery capacity (in mAh and percent of minimum rated capacity) and voltage while charging and at completion of charge
- Time remaining to complete rapid charging (NiCd and NiMH only)
- Current battery charge status
- The battery’s unique serial number, part number and chemistry

Knowledge is power. Now you can make informed decisions on battery replacement and asset management.

Environmentally Friendly
IMPRES chargers have technology that avoids overcharging and our single-unit IMPRES chargers with external power supplies consume 40 percent less energy in standby mode than required by the U.S. Energy Independence and Security Act of 2007.

Long-term safe charging
IMPRES batteries may be left in IMPRES chargers for extended periods without heat damage due to the charger and will be monitored so that they are charged and ready to go whenever they are needed.

Support for mixed battery inventories
IMPRES chargers are compatible with non-IMPRES Motorola batteries, making the migration to all IMPRES much easier. However, automatic reconditioning and all other IMPRES features are realized only when using Motorola IMPRES batteries and chargers.

Extended warranty
When used exclusively with IMPRES chargers, IMPRES batteries carry extended capacity warranties that continue six months longer than Motorola Premium battery warranties.

Proven Tough
IMPRES batteries are subjected to the same rigorous testing and held to the same high standards as all Motorola Premium batteries. Actual results of Drop, Vibration and ESD (Electrostatic Discharge) tests prove that Motorola batteries outperform the competition.
Facts:

1. **IMPRES products are smarter because they “talk” to each other**
   Motorola’s industry-exclusive IMPRES technology allows communication between the charger and the battery, which enables automated battery reconditioning, display of critical charging information and other key benefits. IMPRES batteries have a memory chip that stores all usage information, which can then be accessed and evaluated by any IMPRES charger. IMPRES chargers have built-in reconditioning capability that is automatically utilized any time an IMPRES battery requiring maintenance is inserted.

2. **IMPRES chargers perform adaptive reconditioning**
   Before the availability of IMPRES chargers with automatic, adaptive reconditioning, battery maintenance technicians had to guess at the correct reconditioning intervals. Reconditioning too often wasted battery cycles; not reconditioning often enough resulted in diminished battery performance. IMPRES has changed all that. IMPRES chargers evaluate the actual usage pattern of every battery to establish the optimal reconditioning interval.

3. **IMPRES offers long-term safe charging**
   Most conventional chargers transition to a maintenance charge mode at the completion of a charge cycle. Maintenance charge is constant power applied to a battery in an effort to keep it charged over time. This results in long-term heating that can damage a battery, resulting in lost capacity. IMPRES chargers automatically turn off at the end of a charge cycle yet continue to electronically monitor IMPRES batteries every 5 minutes to determine when more energy should be applied to the battery. This process assures that the battery maintains a very high state of charge without sustaining heat damage due to the charger.

4. **Fully charged doesn’t mean full battery capacity**
   Most conventional chargers have an LED to indicate charge status. Red indicates charging and green indicates charge complete. But what does charge complete really mean? The charger is saying that it did the best it could given the condition of the battery and it is done. However, the resulting battery capacity could be far less than the original stated capacity for an old or defective battery, yet the user has no way of knowing that with only an LED indication. IMPRES chargers with displays provide the actual charge capacity of the battery, so you’ll know exactly how much usage you will get from each battery.

5. **IMPRES charger LED indicators give additional information**
   IMPRES chargers have additional LED indication capability to supply you with even more information during a charge cycle. The alternating red/green LED indicates batteries have fallen below a certain capacity threshold (typically less than 60% of rated minimum capacity). An IMPRES battery exhibiting a red/green indication is not defective — it has simply reached a capacity level that may limit its usage.

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Myth:

Competitive batteries are IMPRES compatible

Competitive battery manufacturers often claim to be “IMPRES compatible.” While it may be true that some competitive batteries can be charged in IMPRES chargers, there are still significant limitations and concerns. The communication between an IMPRES battery and IMPRES charger that enables automatic reconditioning, display of IMPRES data on display chargers and other IMPRES features is a Motorola exclusive technology and will only occur with the combination of IMPRES batteries and IMPRES chargers. Motorola does not test the charge compatibility or safety of competitive batteries in IMPRES chargers.
The batteries listed above are designed for use with the following chargers:
- NNTN7080A – IMPRES Single-Unit Charger
- NNTN7586A – IMPRES Dual-Unit Charger
- NNTN7593A – IMPRES Dual-Unit Charger with Display Modules
- NNTN7065A – IMPRES Multi-Unit Charger
- NNTN7073A – IMPRES Multi-Unit Charger with Display Modules
- NNTN7624A – IMPRES Compatible Vehicular Charger
- RLN5382A – Individual IMPRES Display Module for NNTN7065A

APX Inserts for XTS Chargers
These inserts allow APX batteries to be charged in the following chargers:
- NNTN7687A – Insert for WPLN4111AR XTS Single-Unit Charger
- NNTN7686A – Insert for WPLN4108BR/4130A XTS Multi-Unit Charger

Next Generation IMPRES Dual-Unit Chargers
The new APX IMPRES Dual-Unit Chargers provide public safety personnel the convenience of a spare battery that is charged and ready to be used at all times. This dual pocket design allows simultaneous charging of primary and secondary batteries. This Next Generation IMPRES charger provides advanced features, including the ability to turn on/off reconditioning, reduced reconditioning time and improved energy efficiency.

IMPRES Compatible Vehicular Charger
The APX IMPRES compatible vehicular charger has full IMPRES charger to battery communication capability. This ensures continuity of IMPRES battery charge data logging in a vehicular environment, so the IMPRES battery will receive adaptive, automatic reconditioning and will qualify for the 6-month capacity warranty extension.

NOTE: The IMPRES compatible vehicular charger will not recondition IMPRES batteries while in a vehicle, but it will provide an indication when reconditioning is required in an IMPRES desktop charger.

Introducing Ruggedized PLUS Batteries
Motorola manufactures batteries that meet industry standards (IPx7) for submersibility. These batteries can be submerged in 1 meter of fresh water for 30 minutes, where the battery and water are at the same temperature. Batteries that meet this standard Motorola refers to as Ruggedized.

Motorola now makes batteries to an even more stringent military standard for customers who require a higher level of submersibility protection – MIL-STD-810E Method 512.3 Immersion. Batteries that meet this standard are referred to as Ruggedized PLUS and meet the incremental submersibility requirements below:
- Product is subjected to a temperature shock from -40°C to +85°C, six times.
- Product is dropped on all six surfaces from 4 feet onto concrete.
- Product is heated to 50°C and then submerged in 1 meter of fresh water at 23°C for 2 hours.

The 27°C temperature difference between the battery and the water effectively increases the submersion depth to approximately 2 meters.

† Indicates minimum rated battery capacity.
* When used with an FM approved intrinsically safe radio unit.
The batteries listed above are designed for use with the following chargers:

- **WPLN4111AR** – IMPRES Single-Unit Charger
- **WPLN4108BR** – IMPRES Multi-Unit Charger
- **WPLN4130A** – IMPRES Multi-Unit Charger with Display Modules
- **WPLN4208B** – IMPRES Compatible Vehicular Charger
- **RLN5382A** – Individual IMPRES Display Module for WPLN4108BR (Software Version 1.3 or later)

**IMPRES Compatible Vehicular Charger**

The IMPRES compatible vehicular charger has full IMPRES charger to battery communication capability. This ensures continuity of IMPRES battery charge data logging in a vehicular environment, so the IMPRES battery will receive adaptive, automatic reconditioning and will qualify for the 6-month capacity warranty extension.

**NOTE:** The IMPRES compatible vehicular charger will not recondition IMPRES batteries while in a vehicle, but it will provide an indication when reconditioning is required in an IMPRES desktop charger.

**For HT1000™, MT2000™, MTS2000™, JT1000™, MTX8000™ and MTX9000™**

<table>
<thead>
<tr>
<th>Battery Part Number</th>
<th>Chemistry</th>
<th>Capacity†</th>
<th>Special Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNN9028AR</td>
<td>NiCd</td>
<td>1500mAh</td>
<td></td>
</tr>
<tr>
<td>HNN9029AR</td>
<td>NiCd</td>
<td>1500mAh</td>
<td>Intrinsically Safe*</td>
</tr>
</tbody>
</table>

**For Saber and ASTRO Saber**

<table>
<thead>
<tr>
<th>Battery Part Number</th>
<th>Chemistry</th>
<th>Capacity†</th>
<th>Special Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNN9033B</td>
<td>NiCd</td>
<td>2000mAh</td>
<td></td>
</tr>
<tr>
<td>HNN9034B</td>
<td>NiCd</td>
<td>2000mAh</td>
<td>Intrinsically Safe*</td>
</tr>
</tbody>
</table>

The batteries listed above are designed for use with the following chargers:

- **WPLN4111AR** – IMPRES Single-Unit Charger
- **WPLN4108BR** – IMPRES Multi-Unit Charger
- **WPLN4130A** – IMPRES Multi-Unit Charger with Display Modules
- **RLN5382A** – Individual IMPRES Display Module for WPLN4108BR (Software Version 1.3 or later)

† Indicates minimum rated battery capacity.

* When used with an FM approved intrinsically safe radio unit.
**For MOTOTRBO**

<table>
<thead>
<tr>
<th>Battery Part Number</th>
<th>Chemistry</th>
<th>Capacity†</th>
<th>Special Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMNN4066A</td>
<td>Li-ion</td>
<td>1500mAh</td>
<td>Ruggedized</td>
</tr>
<tr>
<td>PMNN4069A</td>
<td>Li-ion</td>
<td>1400mAh</td>
<td>Intrinsically Safe*, Ruggedized</td>
</tr>
<tr>
<td>PMNN4077A</td>
<td>Li-ion</td>
<td>2150mAh</td>
<td>Ruggedized</td>
</tr>
</tbody>
</table>

The batteries listed above are designed for use with the following chargers:

- WPLN4232A – IMPRES Single-Unit Charger
- WPLN4212A – IMPRES Multi-Unit Charger
- WPLN4219A – IMPRES Multi-Unit Charger with Display Modules
- NNTN7616A – *NEW* IMPRES Compatible Vehicular Charger
- RLN5382A – Individual IMPRES Display Module for WPLN4212A

**For HT750™, HT1250™, HT1250.LSTM, HT1550.XLS™, MTX850™, MTX8250™, MTX8250.LS™, MTX950™, MTX9250™, PR860™**

<table>
<thead>
<tr>
<th>Battery Part Number</th>
<th>Chemistry</th>
<th>Capacity†</th>
<th>Special Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNN4001A</td>
<td>NiMH</td>
<td>1800mAh</td>
<td></td>
</tr>
<tr>
<td>HNN4002A</td>
<td>NiMH</td>
<td>1690mAh</td>
<td>Intrinsically Safe*</td>
</tr>
<tr>
<td>HNN4003A</td>
<td>Li-ion</td>
<td>2000mAh</td>
<td></td>
</tr>
</tbody>
</table>

The batteries listed above are designed for use with the following chargers:

- WPLN4182A – IMPRES Single-Unit Charger
- WPLN4187A – IMPRES Multi-Unit Charger
- WPLN4192A – IMPRES Multi-Unit Charger with Display Modules
- NNTN7618A – *NEW* IMPRES Compatible Vehicular Charger
- RLN5382A – Individual IMPRES Display Module for WPLN4187A

**NEWEST ADDITION!**

**IMPRES Compatible Vehicular Charger**

Now available for MOTOTRBO and Professional Series portables, this IMPRES compatible vehicular charger has full IMPRES charger to battery communication capability. This ensures continuity of IMPRES battery charge data logging in a vehicular environment, so the IMPRES battery will receive adaptive, automatic reconditioning and will qualify for the 6-month capacity warranty extension.

**NOTE:** The IMPRES compatible vehicular charger will not recondition IMPRES batteries while in a vehicle, but it will provide an indication when reconditioning is required in an IMPRES desktop charger.

† Indicates minimum rated battery capacity.
* When used with an FM approved intrinsically safe radio unit.
IMPRES Battery Reader

The industry exclusive IMPRES Battery Reader provides IMPRES battery users the ability to access charging, reconditioning and key usage data that can affect overall battery performance. By keeping batteries in peak condition, talk time and cycle life are optimized, reducing battery replacement.

Utilize the benefits of Motorola’s exclusive IMPRES technology by downloading key usage data from your IMPRES batteries.

Installs quickly and easily. Simply attach the Reader to a PC via the USB port. No additional power required.

Supports all IMPRES batteries.

Get clear and quick insight into the status of your IMPRES battery.

- Present, Initial and Rated capacity provides a quick view of the battery’s ability to hold a charge
- Battery Manufactured Date and Date of First Use provides accurate insight into the age of the battery
- Total Charge Cycles gives insight into the battery’s overall use
- Total Recondition Cycles gives an additional performance indication
- Total Estimated non-IMPRES Charge Cycles helps track warranty claims and provides additional insight into potential battery problems
- Recommendation box helps to quickly identify actions to optimize battery life
- Histograms help quickly identify the appropriate battery capacity to meet your needs
- Export the data easily to Excel® for archiving and easy future access

Battery Reader Standard Package (NNTN7392):

IMPRES Battery Reader
USB Cord
HT Professional Series Adapter Insert
MOTOTRBO Adapter Insert
APX Adapter Insert
System Software CD

*PC not included.
IMPRES Smart Energy Chargers

### Single-Unit Chargers

<table>
<thead>
<tr>
<th>Model Numbers:</th>
<th>APX</th>
<th>XTS</th>
<th>MOTOTRBO</th>
<th>Professional Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>NNTN7080A</td>
<td>WPLN4111AR</td>
<td>WPLN4232A</td>
<td>WPLN4182A</td>
<td></td>
</tr>
<tr>
<td>Dimensions: (H x W x D)</td>
<td>2.4 x 3.8 x 6.4&quot;</td>
<td>3.23 x 3.82 x 7.88&quot;</td>
<td>2.4 x 3.8 x 6.4&quot;</td>
<td>2.2 x 3.8 x 5.8&quot;</td>
</tr>
<tr>
<td>Input Voltage:</td>
<td>100-240 VAC 50-60 Hz</td>
<td>90-265 VAC 50-60 Hz</td>
<td>100-240 VAC 50-60 Hz</td>
<td>100-132 VAC 50-60Hz</td>
</tr>
<tr>
<td>Charging Current: (maximum)</td>
<td>1.25 A</td>
<td>1.5 A</td>
<td>1.25 A</td>
<td>1.25 A</td>
</tr>
<tr>
<td>Warranty:</td>
<td>2 Years</td>
<td>2 Years</td>
<td>2 Years</td>
<td>2 Years</td>
</tr>
<tr>
<td>Operating Temperature:</td>
<td>41° to 104° F</td>
<td>41° to 104° F</td>
<td>41° to 104° F</td>
<td>41° to 104° F</td>
</tr>
<tr>
<td>Charging Method: All Chargers</td>
<td>CCDT / Negative Pulse (NiCd / NiMH) and CCCV (Li-ion)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Dual-Unit Chargers

<table>
<thead>
<tr>
<th>Model Number:</th>
<th>APX</th>
</tr>
</thead>
<tbody>
<tr>
<td>NNTN7586A/7593A</td>
<td></td>
</tr>
<tr>
<td>Dimensions: (H x W x D)</td>
<td>8.2 x 5.6 x 2.5&quot;</td>
</tr>
<tr>
<td>Input Voltage:</td>
<td>100-240 VAC, 47-63 Hz</td>
</tr>
<tr>
<td>Charging Current: (maximum)</td>
<td>1.5 A</td>
</tr>
<tr>
<td>Warranty:</td>
<td>2 Years / 1 Year</td>
</tr>
<tr>
<td>Operating Temperature:</td>
<td>41° to 104° F</td>
</tr>
<tr>
<td>Charging Method: All Chargers</td>
<td>CCDT / Negative Pulse (NiCd / NiMH) and CCCV (Li-ion)</td>
</tr>
</tbody>
</table>

### Multi-Unit Chargers

<table>
<thead>
<tr>
<th>Model Numbers:</th>
<th>APX</th>
<th>XTS</th>
<th>MOTOTRBO</th>
<th>Professional Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>NNTN7065A/7073A</td>
<td>WPLN4108BR/4130A</td>
<td>WPLN4212A/4219A</td>
<td>WPLN4187A/4192A</td>
<td></td>
</tr>
<tr>
<td>Dimensions: (H x W x D)</td>
<td>6 x 17.5 x 11.5&quot;</td>
<td>6 x 17.5 x 11.5&quot;</td>
<td>6 x 17.5 x 11.5&quot;</td>
<td></td>
</tr>
<tr>
<td>Input Voltage:</td>
<td>90-265 VAC 50-60 Hz</td>
<td>90-265 VAC 50-60 Hz</td>
<td>90-265 VAC 50-60 Hz</td>
<td></td>
</tr>
<tr>
<td>Charging Current: (maximum)</td>
<td>1.5 A</td>
<td>1.5 A</td>
<td>1.5 A</td>
<td></td>
</tr>
<tr>
<td>Warranty:</td>
<td>2 Years / 1 Year</td>
<td>2 Years / 1 Year</td>
<td>2 Years / 1 Year</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature:</td>
<td>41° to 104° F</td>
<td>41° to 104° F</td>
<td>41° to 104° F</td>
<td></td>
</tr>
<tr>
<td>Charging Method: All Chargers</td>
<td>CCDT / Negative Pulse (NiCd / NiMH) and CCCV (Li-ion)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Vehicular Chargers

<table>
<thead>
<tr>
<th>Model Number:</th>
<th>APX</th>
<th>XTS</th>
<th>MOTOTRBO</th>
<th>Professional Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>NNTN7624A</td>
<td>WPLN4208B</td>
<td>NNTN7616A</td>
<td>NNTN7618A</td>
<td></td>
</tr>
<tr>
<td>Dimensions: (H x W x D)</td>
<td>3.23 x 3.82 x 7.88&quot;</td>
<td>3.23 x 3.82 x 7.88&quot;</td>
<td>3.23 x 3.82 x 7.88&quot;</td>
<td></td>
</tr>
<tr>
<td>Input Voltage:</td>
<td>10.8-16.6 VDC</td>
<td>10.8-16.6 VDC</td>
<td>10.8-16.6 VDC</td>
<td></td>
</tr>
<tr>
<td>Charging Current: (maximum)</td>
<td>1.25 A</td>
<td>1.25 A</td>
<td>1.25 A</td>
<td></td>
</tr>
<tr>
<td>Warranty:</td>
<td>1 Year</td>
<td>1 Year</td>
<td>1 Year</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature:</td>
<td>5° to 122° F – Charge rate decreased at extreme temperatures.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charging Method: All Chargers</td>
<td>CCDT (NiCd / NiMH) and CCCV (Li-ion)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**IMPRES Battery Warranty**

24 months against any defects in manufacturing or workmanship. Nickel-Cadmium batteries are warranted to maintain 80% rated capacity for 18 months. Nickel-Metal Hydride and Lithium-ion batteries are warranted to maintain 80% rated capacity (70% rated capacity for PMNN4093A) for 12 months. IMPRES batteries charged exclusively in IMPRES chargers carry an additional 6 months of capacity warranty.