

#### Setting the Standard for Battery Backup Solutions

ARRIS pioneered using Lithium-Ion (Li-Ion) battery technology in DOCSIS® compliant Touchstone® Embedded Multimedia Terminal Adapters (E-MTAs) in 2003. ARRIS battery back-up solutions optimize E-MTA performance for lifeline telephony, reduce risk through multiple protection mechanisms, and maximize battery life with proprietary low power designs. ARRIS superior battery technology ensures that all Touchstone battery-backed E-MTA products provide unsurpassed quality, safety, and value within the industry.

#### Lithium-Ion Technology Leadership

ARRIS battery packs come in 2, 4, 6, and 8-cell configurations. ARRIS maintains a comprehensive cell and pack qualification process, which includes safety qualification testing, electrical performance analysis, and rigorous manufacturing standards. With ARRIS batteries, Cable Operators can count on hours of dependable voice service during a local power outage.

#### Environmentally Friendly ARRIS "Green"

ARRIS is pleased to provide products that meet the Restriction of Hazardous Substances (RoHS) directive. Beyond the present directive to remove lead and other heavy metals, ARRIS has increased our focus by removing other environmentally impacting materials from the packaging, cables, and other accessories. Please contact your sales representative for more information.

In many areas, consumers are not allowed to dispose of lithium-based batteries as household waste. To minimize the inconvenience of recycling used batteries, ARRIS has partnered with Call2Recycle for proper disposal. For information about the battery recycling and disposal program, visit the [Call2Recycle](http://www.call2recycle.org/) (<http://www.call2recycle.org/>) website.

## Minimum 8-Hour Hold-up Time by Model

An 8-hour hold-up time means the device can support voice service for at least 8 hours. The actual talk time available is 5 hours. The following factors can affect hold-up time:

- Battery age—most batteries have a service life (when the battery can provide the rated hold-up time) of at least 5 years. ARRIS warrants batteries for 1 year.
- A high number of charge and discharge cycles—whether caused by frequent outages, or frequently disconnecting power (by unplugging the unit or putting it on a switched outlet) can reduce battery service life.
- Ambient temperature—rated capacity and service life assumes room temperature (72°F or 22°C). Lower temperatures may increase service life while reducing capacity, and higher temperatures may increase capacity while decreasing service life.

The following table shows the minimum battery size required to provide an 8-hour hold-up time for each listed model. The following conditions apply:

- The battery is new.
- The battery is fully charged.
- The battery remains at room temperature: 72°F (22°C) at all times.

Model	Minimum Battery for 8-hour Hold-up Time		
	Model #	Part # (single)	Part # (10-pack)
TM602G	BPB022S	790513	718003
TM604G	BPB044S	790512	718005
TM608G	BPB044S	790512	718005
WTM652G	BPB026S	794068	789699
TM722G	BPB044S	790512	718005
TM802G	BPB026S	794068	789699
TM804G	BPB026S	794068	789699
TM822G	BPB026S	794068	789699
TG852G	BPB026S	794068	789699
TG862G	BPB026S	794068	789699
TM1602G, TM3202G	BPB044S	790512	718005
TG1662G, TG1672G, TG1682G, TG2472G	BPB044S	790512	718005

When installing or replacing a battery in a Touchstone device, it typically takes up to 72 hours to calibrate and charge. The device repeats the calibration cycle:

- After the battery has been totally depleted.

- Approximately every 6 months, as part of routine battery maintenance.

On loss of AC power, all units shut down data services (WiFi, Ethernet, and USB as applicable) either immediately or after several minutes depending on model. If continued data service during an outage is required, use a UPS to maintain AC power.

While operating on battery power, the Touchstone® E-MTA supports analog telephones plugged into a telephone jack. However, cordless telephones or other phones that require AC power will not work unless powered by their own backup power source.

The following table provides detailed information about battery support and hold-up times per model for each supported battery type.

Model #	BPB022S	BPB026S	BPB044S	BPB044H	BPD066H	BPB088S	BPC088S	BPD088H
Part # (single)	790513	794068	790512	-	-	790514	-	802251
Part # (10-pack)	718003	789699	718005	722841	785170	721192	722842	785171
Capacity (Ah)	2.2	2.6	4.4	4.4	6.6	8.8	8.8	8.8
<b>TM502</b>								
<i>Idle</i>	5	5	10	10	-	-	-	-
<i>1 line off-hook</i>	3	3	6	6	-	-	-	-
<i>2 lines off-hook</i>	2	2	4	4	-	-	-	-
<b>TM504</b>								
<i>Idle</i>	4	4	8	-	-	16	-	-
<i>1 line off-hook</i>	3	3	6	-	-	12	-	-
<i>2 lines off-hook</i>	2	2	4	-	-	8	-	-
<i>3 lines off-hook</i>	1.75	1.75	3.5	-	-	7.5	-	-
<i>4 lines off-hook</i>	1.5	1.5	3	-	-	7	-	-
<b>WTM552</b>								
<i>Idle</i>	5	5	10	-	-	-	-	-
<i>1-line off-hook</i>	3	3	6	-	-	-	-	-
<i>2-lines off-hook</i>	2	2	4	-	-	-	-	-
<b>TM602v2</b>								
<i>Idle</i>	8	8	12	12	-	24	-	-
<i>1-line off-hook</i>	5	5	8	8	-	16	-	-
<i>2-lines off -hook</i>	4	4	6	6	-	13	-	-
<b>DTM602</b>								
<i>Idle</i>	4	5	8	8	-	-	-	-
<i>1-line off-hook</i>	2.5	3	5	5	-	-	-	-
<i>2-lines off-hook</i>	1.5	2	4	4	-	-	-	-
<b>TM604</b>								
<i>Idle</i>	6	7	12	12	-	24	-	-
<i>1-line off-hook</i>	4	5	8	8	-	16	-	-

Model #	BPB022S	BPB026S	BPB044S	BPB044H	BPD066H	BPB088S	BPC088S	BPD088H
Part # (single)	790513	794068	790512	-	-	790514	-	802251
<i>2-lines off-hook</i>	3.5	4.25	7	7	-	14	-	-
<i>3-lines off-hook</i>	3	3.5	6	6	-	12	-	-
<i>4-lines off-hook</i>	2.5	3	5	5	-	10	-	-
<b>WTM652</b>								
<i>Idle</i>	6	8	12	12	-	-	-	-
<i>1-line off-hook</i>	3.75	5	7.75	7.75	-	-	-	-
<i>2-lines off-hook</i>	3	4	6	6	-	-	-	-
<b>TM608</b>								
<i>Idle</i>	-	-	8	8	-	-	16	-
<i>1-line off-hook</i>	-	-	6	6	-	-	12	-
<i>2-lines off-hook</i>	-	-	4	4	-	-	8	-
<i>3-lines off-hook</i>	-	-	3.25	3.5	-	-	7	-
<i>4-lines off-hook</i>	-	-	2.75	3	-	-	5.5	-
<b>TM722</b>								
<i>Idle</i>	4	4	8 <sup>1</sup>	8 <sup>2</sup>	12 <sup>2</sup>	-	-	16
<i>1-line off-hook</i>	3.25	3.5	6.5	6.5	9.75	-	-	13
<i>2-lines off-hook</i>	2.75	3	5.5	5.5	8.25	-	-	11
<b>TM802</b>								
<i>Idle</i>	6	8	12	12	18	-	-	24
<i>1-line off-hook</i>	4	6	8	8	12	-	-	16
<i>2-lines off-hook</i>	3	4	6	6	10	-	-	14
<b>TM822</b>								
<i>Idle</i>	6	8	12	12	18	-	-	24
<i>1-line off-hook</i>	4	6	8	8	12	-	-	16
<i>2-lines off-hook</i>	3	4	6	6	10	-	-	14
<b>TM804</b>								
<i>Idle</i>	6	6	12	12	18	-	-	24
<i>1-line off-hook</i>	4	6	8	8	12	-	-	16
<i>2-lines off-hook</i>	3.5	3.5	7	7	10	-	-	14
<i>3-lines off-hook</i>	3	3	6	6	8	-	-	12
<i>4-lines off-hook</i>	2.5	2.5	5	5	6	-	-	10
<b>TG852</b>								
<i>Idle</i>	6	8	12	12	-	-	-	-
<i>1-line off-hook</i>	4	6	8	8	-	-	-	-
<i>2-lines off-hook</i>	3	4	6	6	-	-	-	-

Model #	BPB022S	BPB026S	BPB044S	BPB044H	BPD066H	BPB088S	BPC088S	BPD088H
Part # (single)	790513	794068	790512	-	-	790514	-	802251
<b>TG862</b>								
<i>Idle</i>	6	8	12	12	-	-	-	-
<i>1-line off-hook</i>	4	6	8	8	-	-	-	-
<i>2-lines off-hook</i>	3	4	6	6	-	-	-	-
<b>TM1602/TM3202</b>								
<i>Idle</i>	4	4	8	8	12	16	16	-
<i>1-line off-hook</i>	3	3	6	6	9	12	12	-
<i>2-lines off-hook</i>	2.5	2.5	5.5	5.5	8	10	10	-
<b>TG1652/TG1662/TG1672/TG1682/TG2472</b>								
<i>Idle</i>	4	4	8	8	-	-	-	-
<i>1-line off-hook</i>	3	3	6	6	-	-	-	-
<i>2-lines off-hook</i>	2.5	2.5	5.5	5.5	-	-	-	-

**Notes:**

1. The BPB044S will function in the TM722, but only charges at the standard rate.
2. The BPB044H is a high charge 4-cell pack intended for the TM722; it charges at the standard rate in other models.

On loss of AC power, E-MTA units shut down data services (configurable; default 15 minutes or less, depending on the model).

"-" indicates battery not applicable or supported on this E-MTA model.

## Getting Battery Information

Battery status information is available on the Touchstone device's Registration Status Screen. To access this screen:

1. Access the HSD pages as follows:
  - Gateway devices: Using a web browser, access <http://192.168.0.1/> and click the **HSD** tab at the top of the page.
  - Other devices: Using a web browser, access <http://192.168.100.1/> You may have to manually adjust your computer's IP address to (for example) 192.168.100.6 to access the HSD pages.
2. Click the **CM State** link below the ARRIS banner.
3. Scroll down, if necessary, to see the Power Supply Telemetry and Battery Test State information at the bottom of the page. The expected states are:
  - Power Supply Telemetry: **TELEMETRY NORMAL**
  - Battery Test State: **Not Currently Under Battery Test**

The latest version of your Touchstone guide should list all telemetry and test states. Download a guide from [ARRIS documentation](http://www.arris.com/support/guides/) (<http://www.arris.com/support/guides/>).

## Ordering Information

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To order upgraded or replacement batteries, visit the *ARRIS battery website* (<http://shop.surfboard.com/>).

Model Number	Description	Part # (single)	Part # (10-pack)
BPB022S	Touchstone Li-Ion Battery Pack, 2-Cell, 8.4V, 2200 mAH, Standard Charge	790513	718003
BPB026S	Touchstone Li-ion Battery Pack, 2-Cell, 8.4 V, 2600 mAH, Standard Charge	794068	789699
BPB044S	Touchstone Li-Ion Battery Pack, 4-Cell, 8.4V, 4400 mAH, Standard Charge	790512	718005
BPB044H	Touchstone Li-Ion Battery Pack, 4-Cell, 8.4V, 4400 mAH, High Charge	-	722841
BPD066H	Touchstone Li-Ion Battery Pack, 6-Cell, 8.4V, 6600 mAH, High Charge	-	785170
BPB088S	Touchstone Li-Ion Battery Pack, 8-Cell, 8.4V, 8800 mAH, Standard Charge	790514	721192
BPC088S	Touchstone Li-Ion Battery Pack, 8-Cell, 8.4V, 8800 mAH, Standard Charge	-	722842
BPD088H	Touchstone Li-Ion Battery Pack, 8-Cell, 8.4V, 8800 mAH, High Charge	802251	785171

## Technical Specifications

This section provides a brief overview of the batteries available for Touchstone products. For more detailed information about battery operation, see the *Battery Reference*.

## Visual / Dimension Specifications

**Note:** photos are not to scale when document is printed.

Model BPB022S

Ordering codes:

- 10-pack: 718003
- Single: 790513



Dimensions (H x W x D):

- in. : 1.2 x 3.1 x 1.8
- cm: (3.1 x 7.9 x 4.7)

Model BPB026S

Ordering codes:

- 10-pack: 789699
- Single: 794068



Dimensions (H x W x D):

- in. : 1.2 x 3.1 x 1.8
- cm: (3.1 x 7.9 x 4.7)

### Model BPB044S

#### Ordering codes:

- 10-pack: 718005
- Single: 790512



#### Dimensions (H x W x D):

- in. : 1.2 x 5.7 x 1.8
- cm: (3.1 x 14.5 x 4.7)

### Model BPB044H

#### Ordering codes:

- 10-pack: 722841



#### Dimensions (H x W x D):

- in. : 1.2 x 5.7 x 1.8
- cm: (3.1 x 14.5 x 4.7)

Model BPD066H

Ordering codes:

- 10-pack: 785170



Dimensions (H x W x D):

- in. : 6.3 x 2.0 x 2.1
- cm: (16.0 x 5.1 x 5.3)

Model BPB088S

Ordering codes:

- 10-pack: 721192
- Single: 790514



Dimensions (H x W x D):

- in. : 2.0 x 6.9 x 2.0
- cm: (5.1 x 17.6 x 5.1)

## Model BPC088S

## Ordering codes:

- 10-pack: 722842



## Dimensions (H x W x D):

- in. : 2.0 x 2.0 x 6.9
- cm: (5.0 x 4.7 x 14.4)

## Model BPD088H

## Ordering codes:

- 10-pack: 785171
- Single: 802251



## Dimensions (H x W x D):

- in. : 6.3 x 2.0 x 2.1
- cm: (16.0 x 5.1 x 5.3)

