

THE DOC'S BATTERY & CHARGER REVIEWS

VARTA 15 MIN CHARGER REVIEW

APRIL 2005

REPORT

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WHAT IS IN THE BOX?

The box contents are:

- ➔ the charger;
- ➔ an AC power cord;
- ➔ two batteries (there is 4 cell version of the charger); and
- ➔ the Instructions.

Here is a picture of the charger. The power cord is not in the photo. Unlike most mini chargers the transformer is part of the Varta charger and not separate from it.



The charger has an appealing design and looks the part, sleek and modern. The charger tested could only charge 2 cells, rather than 4. There is a 4 cell version of the charger. The charging slots are different from most chargers. In the above picture, you can see the grey (positive) terminal protruding from the top. When a battery is inserted that grey terminal is pushed back into the charger – see the slot on the left side with a battery already inserted. If you look carefully you can see the positive terminal is rounded (look at the silver piece just inside the grey terminal).

The batteries are also designed differently to a standard AA battery. There are at least 4 differences; first, the battery's body is 1mm shorter than a standard AA battery. Secondly, the battery nipple is rounded. Thirdly, the rounded nipple is larger than an ordinary AA battery. Lastly, the battery nipple is 1mm longer than a normal AA battery.

The shape and size of the nipple are clearly shown in the following photograph. The second battery in the photo is a Sanyo 2300.



The second photograph shows how the Varta battery body is 1mm shorter than normal. If you look carefully you will see the Sanyo body is just a little longer than the Varta. Overall the Varta battery is the same size (shorter body, but longer charging nipple) so it can fit into devices that use AA batteries.

The Varta can also charge other Ni-MH batteries, but in 1 hour, not 15 minutes. The physical differences in the Varta battery design must signal to the charger that they can be charged in 15 minutes, as opposed to 1 hour for other brands.

The Varta is, designed for a very specific market – users of digital cameras. Digital camera users who need rechargeable AA batteries and plenty of them - very quickly. Digital camera users look for several key features:

- ➔ a charger that is compact and portable;
- ➔ the ability to charge high capacity 2 or 4 AA Ni-MH batteries fast; and
- ➔ the ability to charge on the road.

The Varta performs well on 2 of these points. It cannot however be used in a car, as it does not have an in car charging lead. The 4 cell version of the charger, has its power source external to the charger and there is also an optional car charger adaptor (i.e. it costs extra). So the 4 cell version is the better choice.

OK, The Doc admits he bought the wrong version. Only after receiving the charger did he realise he purchased the 2 cell, rather than the 4 cell version. Such is life.

USER INSTRUCTIONS

The instructions are satisfactory, but not much more. With a little more effort they could be very good.

CHARGER TYPE (UNIVERSAL OR MINI)

The Varta a mini style charger.

BATTERY SIZES CATERED FOR

AA and AAA batteries. Only Varta 15 minute AA batteries are charged in 15 minutes, other brands are charged in 1 hour. The unique features of the Varta battery must allow the charger to recognise the Varta battery and charge at the faster rate.

BATTERY TYPES CHARGED

The Varta only charges Ni-MH batteries. The Varta website does also state Ni-Cd batteries are charged, but the instructions and the charger itself only mention Ni-MH batteries.

FEATURES SET

Some of the major features of the charger are:

- ➔ the documentation is silent on how the Varta is controlled. It will either be Microprocessor controlled or Integrated circuit controlled;
- ➔ the Varta probably uses a pulse charge and will trickle charge once the batteries are fully charged (but that is a guess);
- ➔ the charge rate is very high, in fact 7,500 mAh (for 4 AA or 4 AAAs). A lower rate would be used for non-Varta batteries, probably around 2,000 – 2,500 mAh (a guess based on charging times);
- ➔ defective battery detection (it is not clear if the charger has reverse polarity detection);
- ➔ the charger will work from mains power (the 4 cell version can also use the optional 12 volt car cigarette adaptor); and
- ➔ maximum capacity is 2,000 mAh AA and 800mAh AAA. So batteries above 2,000 mAh are not fully utilised in the charger (the Varta 15 minute batteries are rated at 2,000 mAh).

A few things the Varta does not do:

- ➔ the user is unable to mix battery size and type. You cannot mix a Varta 15 minute battery with normal Ni-MH batteries at the same time; and
- ➔ it only takes AA and AAA sized batteries.

SAFETY FEATURES

The Varta does not have extensive safety features, but the features include:

- ➔ pressure switch (The Doc is not exactly sure what this is. It is possible that the charger can monitor changes in the battery dimension and cut off the charging process if the battery expands outside acceptable parameters);
- ➔ temperature cut off (definitely needed for the Varta 15 minute batteries); and
- ➔ timer cut off.

The Varta does not have extensive safety features. Little more than the bare minimum needed.

EASE OF USE

This charger is easy to use. Put the batteries in and the Varta does the rest. The safety features will protect the batteries from being over charged, even if you forget to remove them. The well thought out design make this charger a pleasure to use.

PERFORMANCE

As noted above the charge rate is very high, in fact an astonishing 7,500 mAh (for 4 AA or 4AAAs). A lower rate would be used for non-Varta batteries, probably around 2,000 – 2,500 mAh. To put this in perspective, the Vanson Speedy Box's maximum rate for C size batteries is 700 mAh and only 500 mAh for AA batteries. The PowerBase C-T3 manages a respectable 1,100 mAh, but this is still far behind the Varta.

Such a high rate comes at the cost of heat, heat and more heat. In fact, the batteries get so hot the charger has a built in fan to help heat dissipation.

THE POWERBASE IN USE

That is not a helicopter you can hear when you turn the charger on. It is the built in fan used to keep the batteries cool, especially the high speed Varta batteries, which get very, very hot during the 15 minute recharge. With “normal” Ni-MH batteries, the fan may turn off after about 10 minutes if the battery temperature does not get too hot.

Using a sound pressure meter located 6cm from the charger, at a 45 degree angle, the noise level was 73 decibels. There is a clear audible hum 10-15 metres away from the charger. This will annoy some users.

The speed and heat associated with the very fast charging will have an adverse affect on the number of recharges and the overall battery life. You will not get as many recharges out of batteries in this charger compared to say the Rezap Battery Doctor or PowerBase C-T3.

Batteries should return to room temperature after charging, before they are used. The high heat levels may mean you have to wait for up to 30 minutes, so the battery cycle time is not 15 minutes but more like 45 minutes (those 1 hour chargers are not looking so slow now).

The Varta is a well made and designed charger. The batteries fit securely into the charger and the charging terminals are well made. The unit even has rubberised feet so the charger can be placed on hard surfaces without dramas. It is a nice charger to handle and use. No changes to design readily come to mind. Although heat and noise are obvious weaknesses.

DOC'S RATING (RANKED OUT OF 10)

Feature set	7
Safety Features	7
Ease of use	9
Versatility	5
Value for money	7

Overall ranking 7

Documentation Satisfactory

The limited market of this type of super fast charger does result in a lower overall score.

CONCLUSION

The Doc has mixed feelings about the Varta. On the one hand it is well designed and nice to use. On the other, it lacks versatility, uses special batteries for super fast charging and is hot and loud. Suitable for those that want speed above all else.

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<http://www.users.on.net/mhains/>

thedoc@internode.on.net

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