

# Digisat III *Pro*

Satellite Tracking Meter With Self-Contained Battery



Available At:

## RoxSat.Biz

973-784-0030

501 US HWY 46 WEST, KENVIL, NJ 07847

|                              |                                                                                |
|------------------------------|--------------------------------------------------------------------------------|
| Input Frequency .....        | 900-2200 MHz                                                                   |
| Input Level .....            | 20-100 dB $\mu$ V                                                              |
| Through Loss .....           | 3.5 db                                                                         |
| Input Impedance.....         | 75 Ohm "F" connector                                                           |
| Output Impedance .....       | 75 Ohm "F" connector                                                           |
| Measuring Method .....       | LCD display with full text graphics Pitch tone on audio speaker                |
| Power Supply .....           | Internal 8.4 V Ni MH battery or from satellite receiver through coaxial cable. |
| Power Consumption.....       | 40 mA/50 mA utilizing audio speaker                                            |
| Overload Protection .....    | 600mA LNBF current draw limiter (Meter indicates "Over Current")               |
| Input Voltage Tolerance..... | Receiver up to + 28vDC max.                                                    |
| Battery Performance .....    | Fully charged @ 70° F ~ One hour operation when connected to a dual LNBF       |

Digisat III Pro is available at: [www.RoxSat.Biz](http://www.RoxSat.Biz)

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## IMPORTANT SAFEGUARDS

**Read and Follow Instructions**—All the safety and operating instructions should be read before the product is operated. Follow all operating instructions.

**Retain Instructions**—The safety and operating instructions should be retained for future reference.

**Heed Warnings**—Comply with all warnings on the product and in the operating instructions.

**Outdoor Antenna Grounding**—If an outside antenna is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/ NFPA No. 70-1984 (Section 54 of Canadian Electrical Code, Part 1) provides information with respect to proper grounding of the mast and supporting structure

**Power Lines**—An outside antenna system should not be located in the vicinity of overhead power lines, other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching or approaching such power lines or circuits as contact with them might be fatal. Installing an outdoor antenna can be hazardous and should be left to a professional antenna installer.

**Cleaning**—Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning

**Water and Moisture**—Do not use this product near water—for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool and the like.

## **Overview**

The Digisat III Pro is designed to be an aid in aligning satellite antennas so they can provide maximum performance. Please be aware of the fact that there are numerous satellites which will cause the Digisat III Pro to respond with a signal reading. The installer must select the correct satellite for alignment. It is quite easy to select the wrong satellite and find that the satellite receiver indicates “No Signal”. The software in the satellite receiver can provide the elevation and azimuth of the satellite desired. With this information in-hand and a good compass you can point the antenna in the proper direction. Then, with the aid of the Digisat III Pro, the performance of the antenna can be maximized by watching the tuning bar and digital strength readings.

Please take time to read this instruction manual so you will be familiar with the capabilities of the Digisat III Pro.

## **Charge the Battery**

The Digisat III Pro can be powered by the internal battery or from a satellite receiver. We suggest you charge the internal battery before attempting to use the meter as, in most field situations, you will probably be relying on the internal power.

To charge the battery, plug the wall charger or the provided vehicle charger cord into the “15VDC socket on the meter. The LCD display will indicate charging is in process with approximately 14 hours to go on the cycle.

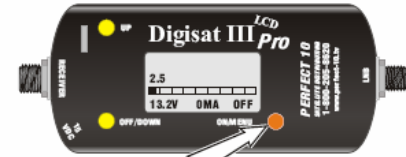
NOTE: If the internal battery is ‘dead’, connecting the wall charger or vehicle charger cord will only begin the battery charge cycle; this will not power the meter.

To use a satellite receiver for power, or to power the meter when the battery is discharged, plug the Digisat III Pro into the coax between the receiver and the LNBF, the Digisat III Pro will start up immediately. However, the satellite receiver will not charge the internal battery. Charging must be done with the wall charger or vehicle cord.

## Startup

After the battery has charged, press the “ON/MENU” button. The Digisat III Pro is immediately ready to begin antenna alignment. To turn the meter off, press and hold the “OFF/DOWN” button until the screen displays “Power Off”.

When the meter is turned on and connected to a dish, the signal strength will be indicated by the bar graph and in digits just above the bar graph. As you move the dish, you will see an increase and decrease in signal strength. The objective is to maximize the signal strength indicated by minor azimuth, elevation and rotation adjustments of the dish. When you have maximized the signal, lock the dish mount bolts and re-attach the LNBF to the switches or cables connecting the satellite receiver to the antenna. Then check your alignment efforts with the satellite receiver



Press to use the internal battery

## Connections

### Single or Dual LNBFs

Connect the Digisat III Pro to a single or a dual LNBF with the provided RG-6 jumper cable. It does not matter which connection on a dual LNBF you use, both connectors supply the same information about alignment.

### Phase III LNBF

Connect the provided RG-6 jumper to any of the four ‘F’ connections on the Phase III LNBF, these connections are not satellite-specific and all four provide the same information. The Digisat III Pro will provide alignment data from the 101° LNBF immediately. If you would like to look at the 119° LNBF, turn “on” the 22K tone. See page 3 of this manual for an explanation of this feature.



Power demand over 600 mA will result in an “Over Current” indication.



IF you use a satellite receiver for power, understand that a satellite receiver will typically send voltage switch and 22K tones to the LNBF when in a 'search' mode. The 22K tone from the receiver will cause the Phase III LNBF to jump from the 101° feed to the 119° satellite feed. That can be confusing while trying to line up a dish. So, to avoid this problem, block the tones from the receiver by selecting >OFF in the 22KHZ MODE menu; then the 101° signal will be continuously presented on the meter. IF you want to look at the 119° satellite, simply select >ON in the 22KHZ MODE menu and the Digisat will send a continuous self-generated tone which will lock the LNBF on the 119° feed.

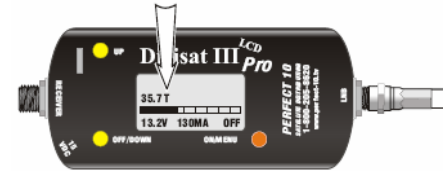
### **Audible Tone**

An audible tone is available if you would prefer listening to the Digisat III Pro rather than trying to watch the digital readings or bar graph.

To use the tone capability, start from the default signal sensing mode. (Right)

Press the “OFF/DOWN” button once. The tone will begin and the letter ‘T’ will appear above the bar graph.

To cancel the tone, press the “OFF/DOWN” button one more time.



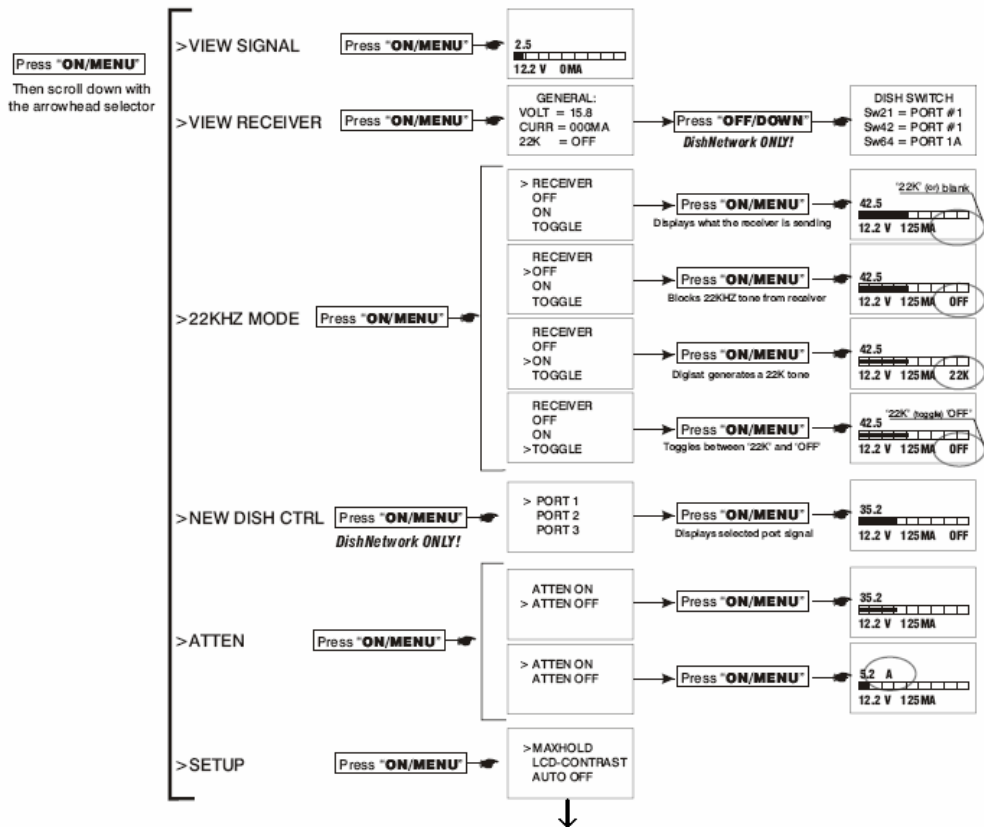
### **Main Menu**

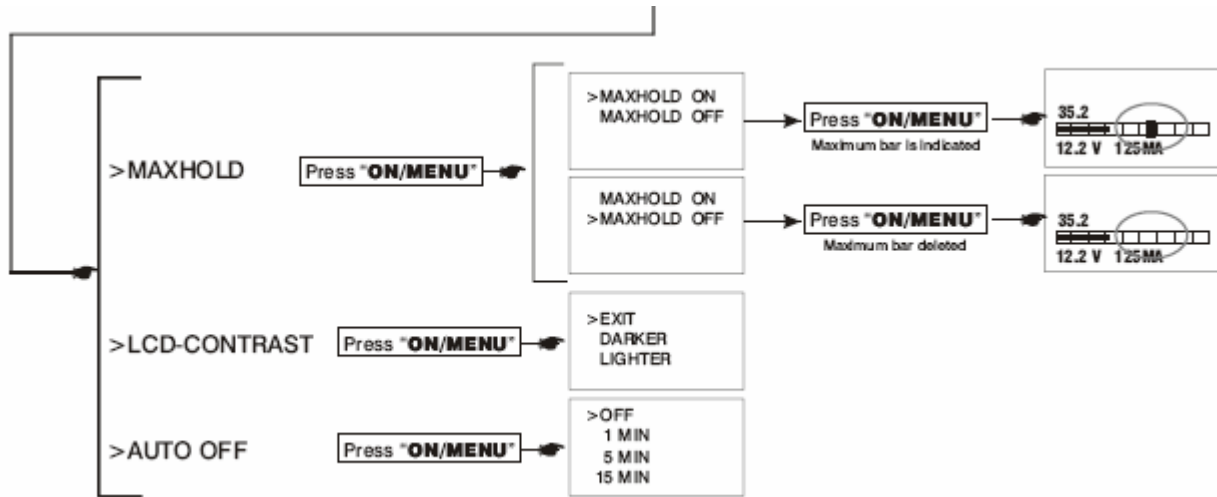
The Digisat III Pro can provide a lot of information about your satellite system. To access the main menu, press the “ON/MENU” button. The screen illustrated (right) will appear and provide a very detailed range of tests and adjustments. The menu map and illustrations about what each function can do for you are in this manual. Press the “UP” or “OFF/DOWN” button to scroll the arrowhead pointer up and down through the menu items listed below.

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VIEW SIGNAL                                                         | This is the screen you will see when you first turn the Digisat III Pro on. These bars indicate the general signal strength, voltage and current draw in mA of all connected devices                                                                                                                                                                                                                                                                                                                                                                                                               |
| VIEW RECEIVER                                                       | <p>Displays the voltage provided by the satellite receiver or battery. Indicates the total current draw in mA of all connected components. Also indicates if a 22kHz tone is being sent by a DirecTV® receiver. These readings verify the receiver operation. Also, using the receiver for power, you can measure voltage at the receiver and then at the end of the coax, this will help calculate the voltage loss through the coax cable.</p> <p>Pressing the “OFF/DOWN” button brings up a second screen which displays the requested port number from an early model DishNetwork receiver</p> |
| 22KHZ MODE                                                          | <p>The Digisat III Pro has a built-in 22Khz tone generator which can be activated by this function. This allows you to control many typical switches such as the DirecTV Phase III LNBF. For example, on that LNBF, you can look at the 119° satellite (if the 22KHZ tone is activated) or the 110° satellite if the 22KHZ MODE is set to &gt;OFF.</p> <p>Note that if the 22KHZ is set &gt;OFF, and a receiver is used for power, the tone from a DirecTV receiver will be blocked and the switch commands from a DishPro® receiver will be blocked</p>                                           |
| 13/18V<br>Selectable ONLY when satellite receiver is NOT connected. | You can select 18vDC as the output voltage sent from the battery to the LNBF. Be very frugal when selecting this higher voltage as the circuitry demands a lot more battery power. If the demand on the battery is high, the voltage will AUTOMATICALLY drop back to 13V.                                                                                                                                                                                                                                                                                                                          |
| NEW DISH CTRL                                                       | This item is hidden from view, you must press the “OFF/DOWN” button to scroll down to it. The NEW DISH CTRL feature allows you to control the DishPro switches and LNBFs. Specifically, you can choose any port on a DP21, DP34, DP LNBF or DP Plus LNBF as needed.                                                                                                                                                                                                                                                                                                                                |
| ATTEN                                                               | This attenuates (reduces) the signal meter readings to lower numbers. Handy if the bar graph is maxed out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <p>Note that the 'A' text is displayed when this feature is turned on. To turn this feature off, go back to &gt;ATTEN and select &gt;OFF.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p>SETUP</p> | <p>Setup takes you to a list of options as follows:</p> <p><b>MAX HOLD</b> This function superimposes a small bar at the end of the bar graph (signal strength) which keeps track of the maximum signal received. This can be turned on or off as needed. Your choice will remain in the memory.</p> <p><b>LCD-CONTRAST</b> Scroll down to "DARKER" or "LIGHTER", then press the "ON/MENU" button repeatedly to darken or lighten graphics. Scroll back up to "EXIT" and press the "ON/MENU" button to save your selection in the memory.</p> <p><b>AUTO OFF</b> This sets the automatic timer to turn the Digisat III Pro off when the battery is used for power. Scroll down to the setting you prefer and press the "ON/MENU" button to save the time you selected in the memory.</p> |

# Menu Map





## Receiver Video

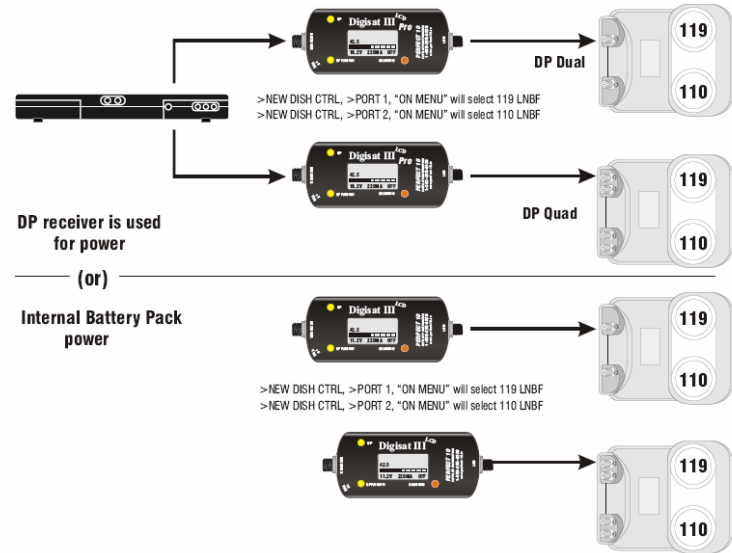
You can check the video present at the satellite receiver with the Digisat III Pro in the line. Just remember that the switching signals from the receiver can be blocked if you have the 22K MODE set to “>OFF”. To allow the receiver to properly control any attached switches or the LNBF, make sure the selection in 22K MODE is “>RECEIVER”.



## D-Network

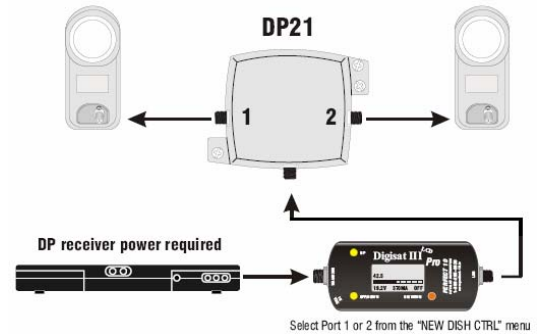
Either the internal battery pack in the Digisat III Pro or a DP receiver can be used to power the DP LNBFs as shown in the following setups on this page. If you use the internal battery, make sure it is fully charged as the Port selection in “NEW DISH CTRL” may not work reliably with a low battery.

Note that the DP receiver sends out a “switch” command whenever it is not locked on a satellite, obviously, this is the case if the antenna is not aligned yet. This command causes the dual or quad LNBF to switch randomly from one output (say 110) to the other (say 119). When aligning the antenna, this can be pretty confusing so when using a DP receiver for power, block the switch command in the Digisat III Pro by turning the 22KHZ MODE to “>OFF”.



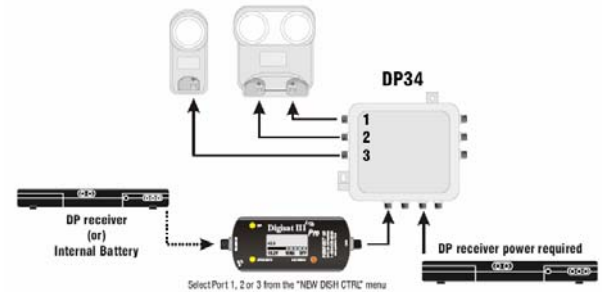
## The DP21 Switch

The DP21 switch and the connected LNBFs may draw more current than the internal battery can provide on a continuing basis; therefore, we suggest that you attach a DP receiver to the Digisat III Pro. The receiver will then supply the necessary constant power to the components.



## The DP34 Switch

The DP34 and its components draw a considerable amount of current, typically in excess of 600 mA. Since this approaches the upper current limit of the Digisat, we suggest using two DP receivers, one to power the hardware components and the second (or the internal battery) to power the Digisat. You can look at any of the three switch ports by making the appropriate PORT selection in the Digisat III menu. The port selection signal generated in the Digisat is only sent when you initially select Port 1 or Port 2 or Port 3 with the arrowhead and press the "ON/MENU" button. Thereafter, if you power down the switch, or make any other changes, you may need to re-select the desired port in the menu and press the "ON/MENU" button again.



## DishPro Plus

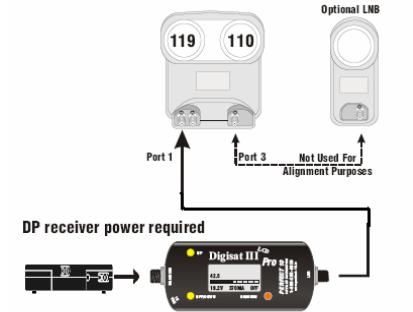
The DishPro Plus hardware and technology necessitates the use of the DP receiver for external powering of the LNBF during alignment. Specifically, receiver power must be supplied to Port #1 on the LNBF. This can be accomplished by passing power through the Digisat (diagram #1) or connect the receiver directly to Port #1 (diagram #2) and attach the Digisat to Port number two. In diagram #1 you must go into the “22KHZ MODE” in the Digisat menu and select “OFF”. This will block the switching commands sent from the receiver.

--- OR ---

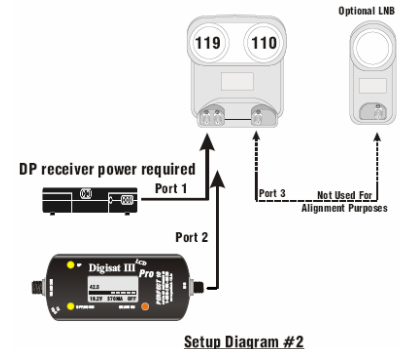
In the diagram #1 above, the DP receiver is supplying power through the Digisat; in the diagram #2 at right, the power is supplied directly to the DishPro Plus LNBF and the internal battery of the Digisat is only providing power for the meter. Either setup will work.

Note that in both cases receiver power MUST be supplied to PORT 1 of the LNBF for the hardware to function correctly.

Digisat III Pro is available at: [www.RoxSat.Biz](http://www.RoxSat.Biz)



Select Port #1 from the "NEW DISH CTRL" menu for reading 119° West.  
Select Port #2 from the "NEW DISH CTRL" menu for reading 110° West.



Setup Diagram #2

Select Port #1 from the "NEW DISH CTRL" menu for reading 119° West. [t.info](http://t.info)  
Select Port #2 from the "NEW DISH CTRL" menu for reading 110° West.

## **Additional information**

Be aware the Digisat III Pro is an AID to aligning the dish type antenna; it will not identify which satellite you are looking at. It still takes basic knowledge of satellite elevation and azimuth to track and identify the correct satellite(s). You can easily pick the wrong satellite, align the antenna and then discover that the satellite receiver indicates NO SIGNAL.

The Digisat III Pro can be used with digital or analog LNBFs. It also operates with both circular and linear polarized LNBFs. The only qualification is that the LNBF must be down-converting to an I.F. Frequency of 900~2200 Mhz (which is typical of most LNBFs).

The Digisat III Pro looks at the entire spectrum of signals received from the LNBF and gives an overall summation of the signal. It is not transponder / frequency selectable. IF you need specific frequency selections,

There is not an exact number meter reading which you should attempt to achieve. The objective is to MAXIMIZE the meter reading so that the antenna and LNBF are providing the best signal possible.

The signal level reading indicated on the Digisat III Pro will NOT be the same reading as you get on the satellite receiver. These two readings can compliment each other (when one increases, the other increases) but the numbers will not be the same. The sat receiver indicates interpreted data reception (Forward Error Correction) while the Digisat III Pro indicates overall gain of the LNBFs.

The Digisat III Pro can be confused by weak (satellite frequency) signals originating from the LNBF if these weak signals strike a tree or building and are reflected back into the dish. When trees are in the path of the satellite signals, you may need to fall back on the satellite receiver for correct dish alignment.

Battery performance time is GREATLY affected by cold air temperature.. In freezing conditions battery packs can lose more than 60% of their capacity. To avoid cold battery Problems, keep the Digisat III Pro in your (inside) shirt pocket until time to use it.

Some LNBF switches can interfere with proper operation of this device. The Digisat III Pro is designed to control switches that respond to a 22Khz tone for signal selection. Switches that require other methods of signal selection may have to be bypassed. Some antennas have these devices located in the mounting area of the LNBFs. To alleviate this situation, it may be necessary to carry an extra mounting bracket with standard LNBFs. Temporarily utilize this extra bracket until alignment is completed, then reattach the switched LNBFs.

The Digisat III Pro is designed to align satellite antennas. It will not aid in the alignment of off-air TV antennas.

The internal battery charger circuit (activated by the wall power supply or vehicle charger cord) takes 14 hours to fully charge a dead battery. The circuit has a built-in voltage detector which will prevent overcharging a partially charged battery. The internal charger circuit does not “trickle charge” so it serves no purpose to leave the Digisat III Pro continually plugged into either power supply. When fully charged, the Digisat III Pro can power one conventional design single LNBF at 13V (default voltage) for about one hour.

The 18V optional setting (see page 3 “13/18V”) is selectable only when running from the internal battery. Keep in mind that this synthesized higher voltage requires quite a bit more power from the 8.4 volt internal battery. Use the higher voltage ONLY if it is necessary. Your battery run time will be reduced.