

SBI



Information Manual

"Building High-Tech
batteries for over 30 years"

800.634.6000

WWW.SYNBAT.COM

CAN YOUR BATTERY FLY?

The “BUDDY” can!

Q. Do you ever need to travel by plane to your next assignment? Have you ever been hassled by TSA because of your batteries?

A. The “buddy battery” meets all regs about “air transport” of lithium ion batteries.

NO MORE HASSLES!

Q. Does your shooter ever want to know “how much time until battery change”?

A. The “buddy” provides real time remaining minutes at the push of a button.

NOW YOU WILL KNOW!

Q. Does your news op guy want to control his battery budget?

A. The “buddy” will tell him the number of cycles used on the way to theoretical end of usefull life.

BUDDY BATTERY SPECIFICATIONS

VOLTAGE	14.8V
CAPACITY	198WH
WEIGHT	3.3 LBS
CHARGING VOLTAGE	16.8V
MAX LOAD	95W (CAMERA AND LIGHT)
4 LED DISPLAY	4 LEDS=75-100% 3 LEDS=50-75% 2 LEDS=25-50% 1 LED =10-25% 1 LED FLASHING = <10%
LCD DISPLAY	MANUFACTURER NAME # CYCLES TO DATE DATE OF MANUFACTURE REMAINING OPERATING TIME IN MINUTES PERCENTAGE OF CAPACITY REMAINING



LITHIUM CONTENT IS 7.92 GMS OF ELC WHICH MEANS THIS BATTERY IS CLEARED FOR AIR TRANSPORT.

THIS IS A 2 PART SYSTEM WHICH BECOMES A BATTERY WHEN COMBINED.

TRANSPORTATION NOTICE FOR THE BUDDY BATTERY

THE LITHIUM EQUIVALENCE OF EACH COMPONENT OF THE BUDDY SYSTEM IS BELOW 8 GMS AND, PER SECTION 445 OF THE DANGEROUS GOODS REG'S, IS THEREFORE SUITABLE FOR AIR TRANSPORT.

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SBI Home Of The VIPER

LI-ION as a BROADCAST BATTERY

INTRODUCTION TO LI-ION CHEMISTRY AS A BROADCAST BATTERY

Pro

Li-ion is the most significant development in rechargeable battery technology in recent years. The voltage of a li-ion cell is a nominal 3.6-3.7 volts. This is 3 times that of the NiCd or NiMH cells. While the Nickel chemistry requires 12 cells in series to attain the 14+ volts appropriate to power a "broadcast" camera, the Li-ion needs only 4 cells to reach 14.8 volts. **So many fewer cells means a drastically reduced weight.**

Li-ion chemistry has a much higher power density per unit volume, therefore it can operate a camera much, much, longer than nickel chemistry. **A bigger gas tank.**

Li-ion has a very low self discharge rate which, when coupled with the larger gas tank, realizes a drastically reduced need for DAILY charge routines. Nickel cells require tophoff's and regular everyday charge cycles. Therefore it is a numerical certainty that nickel will reach the 500 cycle barrier much sooner. **This means that Li-ion has a longer cycle life as well.**

Con

As a self employed photographer has said. "Less weight on my shoulder, more run time, less change out, longer life until replacement. Means less money spent on batteries overall. I guess I can't think of a Con to mention."

Conclusion:

Li-ion camera batteries satisfy the needs of the photog, the chief, and the accounting people more so than any other chemistry. The only ones unhappy with Li-ion camera batteries are those whose commercial existence depends on "recelling" NiCd and NiMH.

TWO FOR ONE

**It's like getting two batteries for the price of one...
...and saving over 40% at the same time!**

Newer recording formats such as Digital-S /SX and High Definition Require twice as much power as previous formats. Today's cameras draw 45+ watts* per hour compared to 20+ watts per hour needed for DVCPRO and SP-Beta (does not include lighting). This has only exaggerated the longtime problem of increasing battery power without increasing battery weight. Newer Lithium-Ion batteries were able to accomplish this, but were extremely expensive and required purchasing a new charger. We've changed all that!

EX: The **Viper V160L from Synergistic Batteries Inc. provides an incredible **160+ watt hours** of available power (11.0 Amp Hours), costs under \$500 (including a **FREE** charger with each battery purchased), and **weighs less than 2 ½ pounds.****

Supply us with your logo and **the back of your camera will promote your company, not a battery manufacturer. The Viper 160 has run a Panasonic P2 camera from Morning Show to 11 o'clock news with power to spare! But don't take our word for it, try it yourself.**

Please call **800-634-6000 or visit **www.SBIVIPER.com** for more information.**

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Call 800-634-6000 for a FREE 14 Day Trial



Lithium-Ion Camera Battery

14.8V 11AH 160WH

Actual Size:

6.0" Long
4.0" Wide
1.94" Deep
2.37 lbs.

**Free!
Personalized
Labels**

**One-Touch
Power Strip Indicates
Remaining Battery
Power**

2-Pin Power Tap

**Power Jack for
WorldWise
Traveler**



WorldWise Traveler
Voltage & Cycle Sensing Charger
Accepts 90-240 VAC and
between 47-63 Hz



**FREE
Charger
w/ Battery
Purchase**

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WARRANTY INFORMATION



Lithium-Ion Camera Battery

14.8V 11AH 160WH

Actual Size:

6.0" Long
4.0" Wide
1.94" Deep



The Viper is covered by a performance based, 18 month Warranty. SBI will replace or repair, at the discretion of SBI, any battery failing to provide 80% of its rated capacity within 18 months from the date of original purchase.

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SAFETY FEATURES

When our design engineers created The Viper' battery they realized that storing such a large amount of energy would require an even greater commitment to product safety. You might say they held true to the old adage that "with great power comes great responsibility". We are proud to submit the following outline of how each battery is equipped with numerous levels of protection.

We begin with the self-switching PTF (poly-temp fuse) installed in the canister of each and every one of the individual Lithium-Ion cells used. This device will allow energy to pass freely from cell to cell or block its passage if the temperature of the cell exceeds the PTF's pre-set value. We use only the highest quality PTFs, which are accurate to within 1% of the pre-set value. When the cell's operating temperature is returned to normal the PTF will re-set itself and resumes allowing the energy to again pass freely. The individual cells are then welded into a pack using the broadest, heaviest, connecting tab stock allowable. This serves a two fold purpose. The broader the tab stock the wider the area is for the energy to flow; Which also helps to eliminate potential heat build up. The heavier tab stock fortifies the strength of the battery pack, making it more solid. The more solid a pack can be made, the less likely a broken weld will occur, reducing the risk of a short circuit. A compartment temperature sensor is then installed. This sensor guards against inappropriate battery usage in the event the internal temperature of the battery case is elevated to an unsafe level.

Once the battery pack is secured, the Safety First Circuitry is attached. The Safety First Circuit Board is The Viper's primary safety system and is also responsible for the battery's BTC Interface capability. While in use the board provides the battery with Triple Redundant Protection.



SAFETY FEATURES

First the battery is protected against Over Current. This means the battery will shut down should it be exposed to a charge current greater than 5 Ah or a discharge rate greater than 10 Ah.

Second it is protected from Over Voltage. Again the battery will automatically decline to accept any voltage input higher than 16.8V, the cell manufacturer's recommended charging voltage for a pack this size.

The third fail-safe prevents Over Heating. As in the first two scenarios the battery will not function if its operating temperature exceeds the cell manufacturer's suggested limit.

Each one of these three safety circuits is supported by two back-up circuits in case the first circuit fails. Therefore, you have three safeguards against over current, three against over voltage and three against over heating, a total of nine in all. Breaching this much security would require opening the case and shunting past the Safety First Circuitry.

Another safety factor is the battery housing or case design. The case is made from a High Impact Resistant Plastic, capable of easily passing most standard "drop" tests. The inside is specially molded so that the battery pack fits snugly, greatly reducing any wasted space or "flop" room. This lessens the possibility of a weld coming loose and causing a short circuit. We have recessed the contact points to reduce the opportunity for accidental short circuiting of the positive and negative terminals. Again, it is possible, but it would have to be done intentionally. Lastly, only two of the four contact holes are active which eliminates the possibility of The Viper being charged on anything other than one of our WorldWide Chargers.

It should be apparent by now that we at SBI take safety extremely seriously. We much prefer you focus on the benefits of switching to the lightweight, increased run-time Lithium-Ion technology, and leave the "what ifs" to us. Please do not hesitate to call if you have any questions or comments regarding our products. Our friendly, knowledgeable sales staff would love to hear from you!

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WorldWise Traveler



WorldWise
Traveler Specifications:
Length : 5.63"
Width : 2.88"
Depth : 1.81"
Weight : 1.01 lbs.

Length of Cords
From Transformer:
To Wall: 4.5'
To Battery: 6'

The WorldWise Traveler, portable Li-Ion battery charger is lightweight and powerful. Its 2Ah charge current will completely charge The Viper in a little under six hours. Featuring our BTC Interface technology The Traveler is a safe, effective way to always be assured of a full charge anywhere on the planet. Its capability to accept 90-240 VAC and between 47-63 Hz gives you great flexibility when traveling.

Our competitors would prefer you purchase a two position charger, that's because you would need two of their batteries to get the same power as one Viper. These chargers generally cost anywhere from \$500 to \$1000. The Traveler is much less, about \$500 to \$1000 less. As a matter of fact it's

FREE !!!

That's right; The Traveler is free with the purchase of The Viper Li-Ion camera battery.



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WORLDWISe TWiN

Two Position Lithium-Ion Battery Charger

The WorldWise Twin charger is specifically designed for use with The Viper, Li-Ion camera battery. Equipped with our exclusive BTC Interface this "smart" charger is constantly receiving voltage status from the Viper's specially designed Safety First Circuitry. This allows the charger to provide just the right amount of voltage and current every charge. Maintaining an even charge current that is carefully monitored against overcharging is the best way to extend the life of your Lithium-Ion battery. That is why The Viper comes with an industry leading 18 months Warranty!

We call our Lithium-Ion battery chargers WorldWise because they are capable of accepting from 90 to 240 VAC and between 47-63 Hz, so you can take them just about anywhere. Both the Twin and Quad chargers can be used as a power supply*, conveniently converting any of the previously mentioned inputs into a 15.8 Volt 4.5 Amp, 4 Pin output.

*(*Note: Unit cannot be used as a charger and power source simultaneously)*



Specifications

Height : 9.50" (Base to Handle)
Width : 3.50" (Face w/ LEDs)
Depth : 5.50" (Mounting Sides)
Weight : 2.00 lbs. (w/o Batteries)

Input : 90-240 VAC / 47-63 Hz

Output :

Charge Ports 16.8 VDC / 3 A

Power Source 15 VDC / 4.5 A

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2WD COMBO KIT

The 2WD Combo Kit is simply incredible!

You not only get two Viper Lithium-Ion batteries, but you also get two WorldWise chargers.

That means 320+ watt hours of available power, plus the dual position WorldWise Twin and handy WorldWise Traveler.

All that battery power, all that charging flexibility and all for just one incredible low price!



The 2WD-160 Combo Kit Includes:

- (2) 11 Ah Viper Li-Ion Batteries
- (1) WorldWise Traveler
- (1) WorldWise Twin

Sold Separately... \$1610
2WD Combo Price... \$1360
You Save... \$250

The 2WD-190 Combo Kit Includes:

- (2) 13 Ah Viper Li-Ion Batteries
- (1) WorldWise Traveler
- (1) WorldWise Twin

Sold Separately... \$1810
2WD Combo Price... \$1510
You Save... \$300



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WorldWise Quad

The WorldWise Quad is the charger of choice when the job calls for multiple batteries to be fully charged at the same time. This workhorse is capable of charging 4 Viper-160 batteries simultaneously from empty to full (11 Amps) in under 4 hours! That's 640 watt hours of available power by lunchtime!



The Quad's BTC Interface will ensure your battery's ability to provide the full 160 watt hours every charge. Combine that with the Safety First Circuitry of The Viper and you are guaranteed to receive optimum battery performance for no less than 18 months. The Quad also accepts 90 to 240 VAC and between 47-63 Hz, and like The Twin it can be used as a 15.8 Volt / 4.5 Amp power supply.



Worldwise Quad

Specifications

Height : 6.75" (Base to Handle)

Width : 4.63" (Face w/LEDs)

Depth : 9.75" (Mounting Sides)

Weight : 5.00 lbs.

Input : 90-240 VAC / 47-63 Hz

Outputs

Charge Ports 16.8 VDC / 3 A

Power Source 15.8 VDC / 4.5 A

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4 ON 4 COMBO KIT

Take the 404 Combo Kit to big savings!

You get 4 Viper Lithium Ion camera batteries, 2 WorldWide Travelers, and the heavy-duty WorldWide Quad charger.

That's a collective 640 to 760 watt hours of battery power. Take a Viper, a spare, and a Traveler just in case. It's less than 6 pounds! For more time consuming jobs take the WorldWide Quad it allows you to charge all four batteries simultaneously.

Chargers Available in V-mount



The 404-160 Combo Kit Includes:

- (4) 11 Ah Viper Batteries
- (2) WorldWide Traveler Chargers
- (1) WorldWide Quad Charger

Sold Separately... \$2925

404-160 Combo Price... \$2525

You Save... \$400

The 404-190 Combo Kit Includes:

- (4) 13 Ah Viper Batteries
- (2) WorldWide Traveler Chargers
- (1) WorldWide Quad Charger

Sold Separately... \$3325

404-190 Combo Price... \$2825

You Save... \$500

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CHARGER SPECS

Battery To Charger (BTC) Interface

All of our WorldWide Chargers feature the unique BTC interface, a State of the Art charging method utilizing a safe and effective combination of Constant Current and Constant Voltage. This process provides the battery with the most balanced charge possible while eliminating the possibility of overcharge.

The BTC Interface begins with the Viper Battery communicating the status of its existing capacity to the charger. If the battery indicates that its current state of charge is less than 60% of its rated capacity, the charger will initiate a constant current charge rate of 2 Ah (max) for the Traveler and 3 Ah for the Twin and the Quad. During this process all three chargers will exhibit a red indicator light.

When the battery achieves between 60% to 90% of its rated capacity the charging method will then switch to constant voltage and the indicator light will change to orange. A constant 16.8* volt charge will then be applied to the battery until the battery also achieves a voltage of 16.8*.



When the battery's circuit board senses a voltage match between both charger and battery the indicator light will switch to green signifying the battery is between 90%-100% full and able to be used. The charger will then gradually reduce charge rate until it senses a match. Then the charger will gently maintain a voltage balance until the battery is removed.

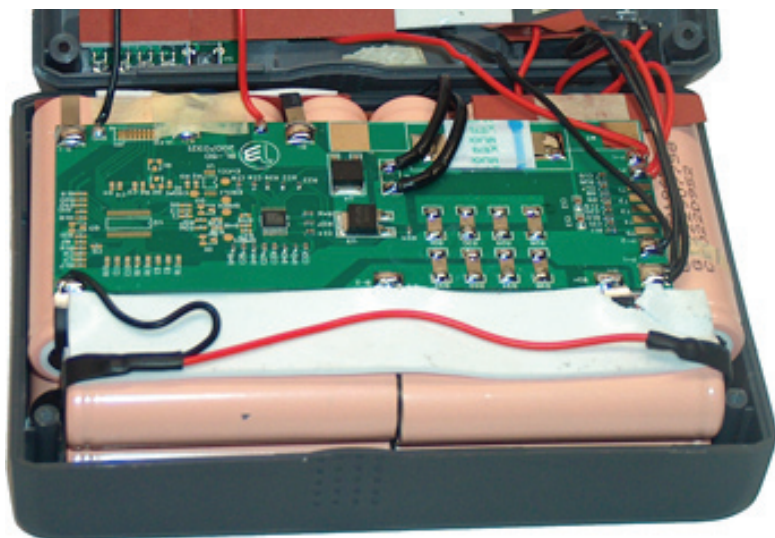
This process is much healthier than the negative delta V (-V) method of charging, which requires the battery to actually be overcharged in order to achieve the (-) negative voltage reading that disengages the charger. This type of repetitive overcharging will only reduce the battery's performance and charge cycles (overall life).

(*16.8 volts is the cell manufacturers suggested charging voltage)

DOCUMENTATION for AIR TRANSPORT

The VIPER Lithium-Ion Camera Battery

Internal Contents:



The Viper is comprised of individual Lithium-Ion rechargeable battery cells welded together to form a single battery pack. The battery contains a number of safety features (please see the Safety Features page) each designed to prevent the battery from accidental short-circuiting. The battery is in complete compliance with the United States Dept. of Transportation Code of Federal Regulations # 49.

United States Dept. of Transportation Code of Federal Regulations # 49 Section 172.185 (Also I.A.T.A and I.A.C.0 Special Provision A45)

Consumer electronic devices containing lithium or lithium-ion cells or batteries, such as watches, calculating machines, cameras, cellular phones, lap-top computers, camcorders, etc., when carried by passengers or crew for personal use. **Spare batteries must be individually protected to prevent short circuits and carried in carry-on baggage only.** In addition, each spare battery must not exceed the following quantities:

- a) for lithium metal or lithium alloy batteries, a lithium content of less than 2g; or
- b) for lithium-ion batteries, with an aggregate equivalent lithium content of more than 8g but no more than 25g may be in carry-on baggage; if they are individually protected so as to prevent short circuits and are **limited to two spare batteries per person.**

The Viper V160L has an equivalent lithium content of 13.2g, its numerous safety features that prevent short circuits can be found on the Safety Feature pages. Please call SBI at 800-634-6000 for more information

2WD-LUX COMBO KIT

The 2WD-LUX is a handy way to transport your portable power accessories. The kit contains the same items as the regular 2WD;

(2) Viper Batteries (11 Ah each)

(1) WorldWide Twin Charger

(1) WorldWide Traveler Charger

all safely contained in a heavy-duty, reusable shipping container that meets or exceeds ATA (American Transportation Association) specifications.

Each kit also includes our airport friendly Securi-Card. This one page laminated information sheet outlines the DOT and IATA regulations in regards to the proper transport of Lithium-Ion camera batteries. The Securi-Card also has pictures of the battery's internal components providing an instant recognition of what the x-ray machine is showing.



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HEAD to HEAD COMPARISON

Viper vs IDX Endura Series Professional Camera Batteries

Battery	Chemistry	Dimensions (Inches) HxWxD	Weight	Available Watt Hours
SBI Viper V190L	(Li-Ion) Lithium-Ion	6"x4"x1.94"	2.5 lbs.	195
SBI Viper V160L	(Li-Ion) Lithium-Ion	6"x4"x1.94"	2.37 lbs.	162
IDX Elite	(Li-Ion) Lithium-Ion	5.5"x3.4"x1.57"	2.7 lbs. Viper will provide 37% longer run-time	142
IDX E-10	(Li-Ion) Lithium-Ion	5.5"x3.4"x1.57"	1.75 lbs. Viper will provide 99% longer run-time	98
IDX E-80(S)	(Li-Ion) Lithium-Ion	5.6"x3.5"x1.97"	1.54 lbs. Viper will provide 138% longer run-time	82
E-80(S) 2 Stacked	(Li-Ion) Lithium-Ion	5.6"x3.5"x3.94"	3.94 lbs Viper will provide 19% longer run time	164

More Reasons to try The Viper...

- Each and every Viper battery comes with it's own **FREE** *World Wise Traveler*, portable charger, eliminating the need for carrying additional spare batteries and bulky multi-unit chargers.
- In most instances, only one Viper battery is needed to shoot for a full day! Don't take our word for it, try it yourself with our **FREE**, no obligation, **14 Day Trial**.
- Keep up with the higher power demands of newer cameras. Today's recording technology requires almost double the watt input of previous formats. Lithium-Ion is not the battery solution of the future, it is here now and finally affordable!

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HEAD to HEAD COMPARISON

Viper vs Anton Bauer Digital HyTRON and Digital Dionic Series Professional Camera Batteries

Battery	Chemistry	Dimensions (Inches) HxWxD	Weight	Available Watt Hours
SBI Viper V190L	(Li-Ion) Lithium-Ion	6x4x1.94	2.5 lbs.	195
SBI Viper V160L	(Li-Ion) Lithium-Ion	6x4x1.94	2.37 lbs.	162
Anton Bauer Digital HyTron 120	(NIMH) Nickel Metal-Hydride	5.31x4.5x3.75	5.63 lbs. Viper will provide 62% longer run-time	120
Anton Bauer Digital HyTron 50	(NIMH) Nickel Metal-Hydride	5.25x3.5x2.13	1.9 lbs. Viper will provide 290% longer run-time	50
Anton Bauer Digital Dionic 90	(Li-Ion) Lithium-Ion	5.25x3.5x2.13	1.7 lbs. Viper will provide 117% longer run-time	90
Anton Bauer Digital Dionic 160	(Li-Ion) Lithium-Ion	5.25x4x3.75	3.4 lbs Viper will provide 22% longer run-time	160

More Reasons to try The Viper V160L...

- Each and every Viper. battery comes with it's own **FREE** *WorldWide Traveler*, portable charger, eliminating the need for carrying additional spare batteries and bulky multi-unit chargers.
- In most instances, only one Viper battery is needed to shoot for a full day! If you shoot in S, SX or High Defintion, or getting ready to make the switch, you need the power of *The Viper*.
- Lithium-Ion is no longer the battery solution of the future, it is here now and now we've made it affordable!

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CAMERA BATTERY COST ANALYSIS

THE MOST ACCURATE METHOD TO COMPARE DIFFERENT MANUFACTURERS CAMERA BATTERIES IS BY THE COST TO OUTFIT A CAMERAMAN FOR THE LIFE SPAN OF THE COMPARING BATTERIES.

EX: A STATION MAY FEEL IT APPROPRIATE TO PROVIDE A CAMERAMAN WITH 4 NICAD OR NIMH 60 TO 100 WH BRICKS TO PROVIDE THE POWER FOR THE DAYS POTENTIAL SHOOTING. THIS EQUATES TO \$1500 OR MORE PLUS THE COST OF THE CHARGER. THE LIFE OF THE BATTERIES HAS SHOWN TO BE CLOSE TO 500 CYCLES OF CHARGE AND DISCHARGE (ABOUT 2 YEARS). THEN IT IS TIME TO RE-CELL OR REPLACE.

THE STATION COULD REPLACE THE EXHAUSTED NICKEL BRICKS WITH 1/2 AS MANY VIPERS AND YIELD THE FOLLOWING BENEFITS:

1. AN IMMEDIATE REDUCTION IN COST TO RE-OUTFIT THE CAMERAMAN BECAUSE ONLY 2 OF THE VIPERS HAS AS MUCH OR MORE RUN TIME AS DOES THE 4 NICKEL BRICKS AND THERE IS NO CHARGER COST.
2. ONE HALF THE WEIGHT ON THE SHOULDER OF THE SHOOTER.
3. IN 2 YEARS WHEN THE NICKEL IS NEEDING HELP, THE VIPERS WILL BE ONLY HALF WAY THROUGH THEIR CYCLES SO THE NICKEL BATTERIES WILL INCUR AN ADDITIONAL COST BUT NOT THE VIPER.
4. FINALLY: IT IS A STEP TOWARD UPGRADING A SYSTEM NOT CONTINUING A DOWNWARD SPIRAL.

THE NUMBERS ARE:

NICKEL COSTS: \$1500 DIVIDED BY 2 YEARS (700 + DAYS) PER PHOTOGRAPH = \$2+ PER DAY.

VIPER COSTS: \$1100 DIVIDED BY 4 YEARS (1400+ DAYS) PER PHOTOGRAPH = \$0.70 PER DAY.

Accessories



The Power T
Dual Battery
Adaptor



Need twice the power or the ability to "hot swap" batteries? Try our Power T dual battery adapter. Get the power you need by using two Vipers at the same time. Includes a Power Tap Jack so you can power other equipment while it simultaneously powers the camera.

XLR plugs for the
Power Tap Cable



**All Viper's, Chargers, and
Accessories Available
with 3 post "Gold Mount"
or "V-Mount" Plate**

Power Tap Cable

This 2-Pin cable allows the equipment operator to power other equipment from The Viper while it simultaneously powers the camera.

