

**DC Voltage source 120V 5A**

**High Resolution voltage programming: 18 bits / 0,5mV**

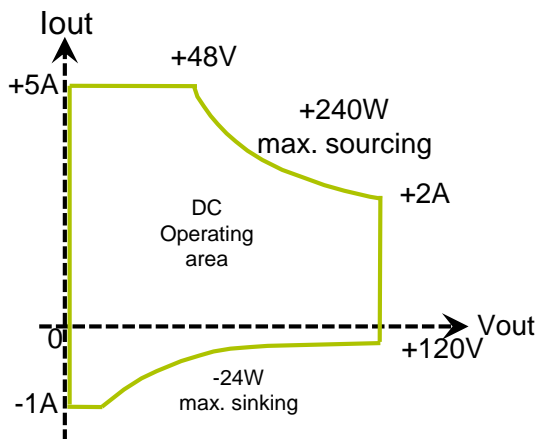
**Low Noise: 20ppm / 2,5mV peak-to-peak**

**Accepts any capacitive load from 0 to 100mF  
optional USB driver for remote pulse controller**

Powered by **itest**

**Main Features:**

- Isolated DC voltage source
- Fast toggling current and power limitation
- 2-quadrant, source & sink operating area:



- 18 bit voltage programming, no missing code
- Safe charging and discharging of any load capacitor
- DC remote voltage regulation stable whatever the cable resistor and the remote capacitor value
- Programmable voltage slope
- No transient when powering on/off
- 16 bit DC voltage & current read-back measurement



**Bilt system features**

- Host connections at chassis level including Ethernet and USB.
- Complete free software package provided, including a turnkey PC software and NI Labview® drivers

**Ordering Guide**

Ref.	Special features
BE2431	240W Output power (2 slots wide)
BE2432	120W Output power (1 slot wide)
BE2435	240W Output power & USB pulse controller
BE2436	120W Output power & USB pulse controller

**Application examples**

- General purpose laboratory programmable DC source
- Static transistor's Drain biasing / Burn-In & Life-Test
- Pulsed current Transistor's Drain biasing / operating Burn-In & Life-Test

## System Specifications

### Operating area

Parameters	Conditions/Comments	Max	Typ.	Max
Voltage programming range		60V		+120V
Current compliance range	Programmable max. sourcing current limit	+250mA		5A
Cable maximum resistance range (R <sub>cmax</sub> )	Programmable DC remote voltage regulation	0		0.5Ω
Cable voltage drop	5A			2.5V
Source output power	DC or transient operation, fast toggling limitation	240W (BE2431 & BE2435) 120W (BE2432 & BE2436)		
Sink output power	DC or transient operation, fast toggling lim.		24W	
Operating temperature	Ambiant temp., 80% RH non condensing	15°C		30°C
Earth isolation	Between power gnd and the Earth	220KΩ & 300nF		
Earth isolation maximum voltage		-150V		+150V

### Accuracy

Paramètres	Voltage prog.	Voltage meas.	Current compliance	Current meas.
Range	0V / +120V	-3V / +125V	0.25A / 5.1A	0A / 5.5A
Resolution	18bit / 0.5mV	16bit / 2mV	12bit / 1.4 mA	16bit / 90μA
2-year accuracy	±40mV±0.05%	±40mV±0.05%	±100mA	±5mA±01%

(\*) Accuracy specified on an 18°C-28°C ambient temperature range, after a 1 hour warm-up

### Connectors

- DC power output + sense : Phoenix MSTB serie 4 terminal screw thread 5.08mm pitch
- SUBD15: DC power output + sense, USB driver, 5V auxiliary power supply, synchro in and out

#### Related products

BA2531	30A remote Pulse Source and Measurement Unit
BE2501	Pulsed source ±25V 200mA
PN1602	Product Note: RF device operating life test

## System Specifications

### Dynamic performances

Parameters	Conditions/Comments	Max	Typ.	Max
User external output capacitor	safe and stable operation whatever the capacitor value	0	10mF	100mF
Internal output capacitor	equivalent total value of the output filter		100 $\mu$ F	
Current step response time	switching load, 0A to 5A or 0W to 240W		50 $\mu$ s	
Small voltage step settling time	1V step, no load, step mode <sup>(1)</sup> , to 95%		12ms	
Full range rise time & fall time	0 to 120V, no load, step mode <sup>(1)</sup> , current limit =5.1A		30ms	
Large capacitor charging time	0 to 120V, 10mF load, step mode <sup>(1)</sup> , current limit =5.1A		400ms	
Large capacitor discharging time	120V to 0, 10mF load, step mode <sup>(1)</sup>		2.7s	
Voltage slope programming	voltage slope generated by 1ms sampling rate	1mV/ms		120V/ms
Remote voltage drop zeroing delay	hot swap of a 10 $\Omega$ load resistor through 0.1 $\Omega$ cable		4s	
Remote voltage drop zeroing delay	peak-to-peak value, 2m cable, no capacitor, 48V & 5A 0.1Hz-10Hz 10Hz-10kHz			1mV 2.5mV
Voltage ripple at switching frequency	peak-to-peak value, 10 $\Omega$ load, no capacitor, 48V & 5A			5mV
Switching frequency		205KHz		215KHz
Read back measurement bandwidth	average current & voltage monitoring		1H	

(1) The step mode is obtained by programming the maximum voltage slope value of 120V/ms

## System Specifications

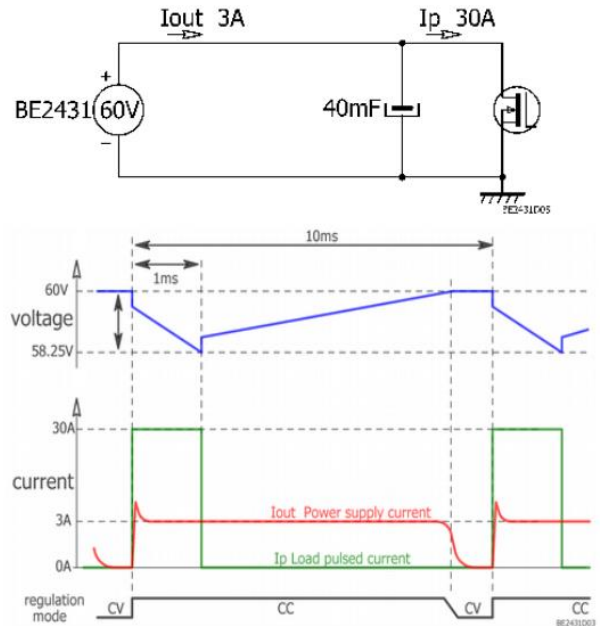
### Application Example: Pulsed current Transistor's Drain biasing

#### Supplying a DC voltage to a switching load:

When performing an operating Life-Test, the power RF/GaN transistor switches itself the pulsed current up to 30A . The BE2430 isolated power supply is designed to drive safely the large remote capacitor required for this switching load.

During the pulse, the capacitor, delivers a large current level (30A, 1ms), and the voltage drops. Meanwhile, the power supply starts a reload cycle limited by the Iout max. current ( 3A, 10ms). Its regulator performs fast toggling between constant voltage and constant current mode.

When stopping, a safe discharging of the large capacitor is proceeded even in case of mains interruption.

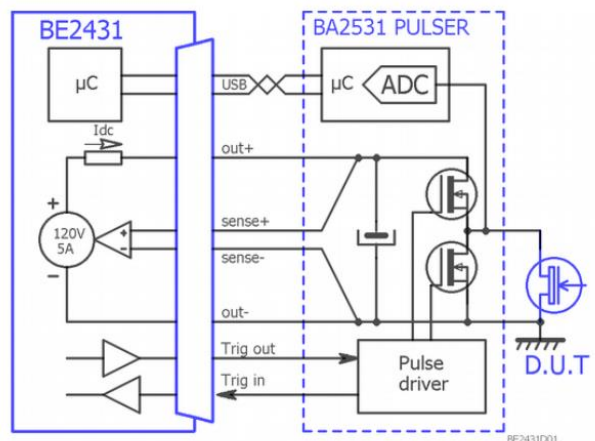


#### High performance setup using the BA2531 remote pulse control & measurement unit:

In addition to its general purpose power supply function, the BE2431 module is also designed to drive the BA2531 remote pulse unit. Application includes both static Drain voltage and pulsed Drain voltage.

This complete setup will perform:

- The synchronous sampling measurements of the remote pulsed voltage and current (retrieved for displaying and memorization instead of the average DC voltage and current).
- The safety protection of the device in case of over-current from the storage capacitor. The "Efuse" function is proceeded within 50ns.
- The optional synchronous voltage switching of the drain voltage
- The optional Trigger in & out synchronization functions



## System Specifications

### Documentation

BE2430 Brochure	Rev 1.0	Module data sheet / specifications and main features
BE2430 User Manual	Rev 1.0	User manual: chassis, network, software and connections description
AN 1602 Application note		Pulsed Load Pull & RF device Operating life
<a href="http://www.bilt-system.com/">http://www.bilt-system.com/</a>		Bilt user manual and any other Bilt module specification

### Standards, Calibration, Warranty and Maintenance

*Bilt system is compliant with the applicable European Directives and holds the CE mark.*

*Any iTest product comes with a two-year parts and labour guarantee and a calibration certificate if applicable. A telephone support service is also available for the same period.*

*Our calibration laboratory performs according to ISO/CEI 17025 "General requirements for the competence of testing and calibration laboratories". All measurements are traceable to the International System of Unit.*

*The recommended calibration interval of this product is 2 year.*

*On request, Itest can proceed to scheduled calibration (in our workshop or at the customer's site).*

*Maintenance can also be performed on-site or in our workshop.*

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