PowerGenius XL™

The Smart Choice in HF Power Solutions

PowerGenius XL™ is a true legal limit, all mode, HF -6m solid state amplifier in a small lightweight package incorporating the very latest in LDMOS transistor technology. PowerGenius XL obsoletes those heavy and expensive to maintain tube amplifiers even in the most demanding DX and contest operations. Born of the collaboration between Sky Sat's 403A Signature Laboratory in Europe and Austin, Texas based FlexRadio Systems, the PowerGenius XL joins decades of HF amplifier and RF system engineering experience to deliver unique, proprietary design features built with state-of-the-art components for unrivaled performance.

√ Full legal power HF -6m, 1500W ICAS, all mode with 2000W headroom

√ Unique Maximum Efficiency Algorithm (MEffA™) for efficiencies up to 75%

√ Diplexed filters maximize harmonic suppression and efficiency

√ Fully SO2R capable - 70dB nominal isolation between exciter inputs

√ Automatic Power Control (APC) for ultra fast SWR protection

√ Remote control with desktop application in LAN or WAN networks

PowerGenius XL™

About PowerGenius XL

The PowerGenius XL is a 100% duty cycle, legal limit (1500W ICAS) 1.8-54MHz RF amplifier intended for both amateur and government use. It incorporates a pair of modern NXP 1K5H LDMOS transistors that are individually capable of 1.5 KW thus providing plenty of headroom for lowest IMD and spurious output. Efficiency and spurious performance are also enhanced through the use of diplexed filters.

Multiple band selection methods are supported including CAT, CI-V, BCD band decode and Ethernet to allow automated operation with most modern radios. When connected to a FLEX-6000 Series radio over Ethernet, SmartSDR™ provides fully integrated station automation. To simplify integration, T/R control is provided over the Ethernet connection which further minimizes wiring. In addition, all amplifier status reporting, including power levels, fault conditions and resets are reported to the FLEX-6000 series transceiver using the SmartSDR API. SmartSDR client interfaces such as SmartSDR for Windows®, Maestro™ and others can display power levels and other reported statuses.

For remote operation and other RF radio exciters, an Ethernet API or friendly Windows® or Android™ app can control the PowerGenius XL. For contest operation, the PowerGenius XL is SO2R capable with two inputs and two outputs for two sources and antennas and the rapid band switching eliminates the need for two amplifiers. A single FLEX-6700 and PowerGenius XL comprises a complete SO2R station at half the cost of competing solutions.

UNIQUE FEATURES OF POWERGENIUS XL

PowerGenius XL provides unprecedented performance in your shack while providing cost savings over other competing solutions.

Unique to PowerGenius are the following features:

Dual Filtering

PowerGenius XL's dual filtering capability provides for exceptionally clean spectrum.

√ Diplexer for each band routes fundemental frequency through a Low Pass Filter (LPF) and harmonics to a 50 Ohm load.

√ All harmonics are significantly suppressed beyond strict FCC and CE regulations.

√ Harmonic energy goes through two stages of reduction.

MEffA™= Unparalled Efficiency

√ Patent pending Maximum Efficiency Algorithm (MEffA)

√ For single tone modes (CW, RTTY), MEffA sets dynamic real time output device drain voltage and current yielding maximum efficiency for output power in real time, reducing heat dissipation for efficiency up to 75%.

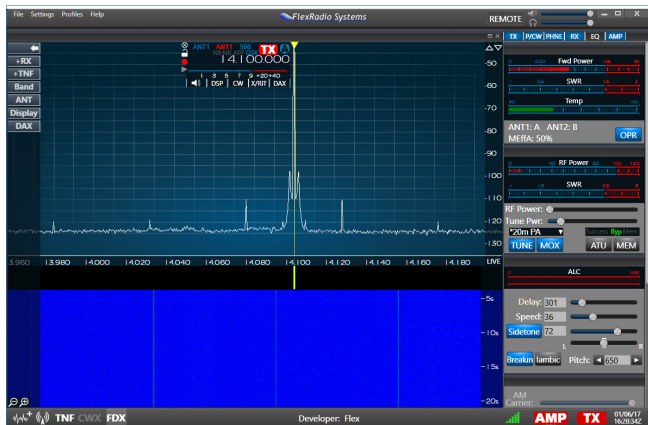√ Up to 65% efficiency with excellent IMD characteristics for SSB.

Automatic Power Control (APC)

√ When high VSWR is detected, APC proportionately reduces output power to a safe level allowing for continued operation.

√ When VSWR exceeds high limit, APC switches to STBY mode.

√ When APC detects increased heat sync temperature, it will reduce the output power only if the MEffA system can not contain it within allowed limits; when the amp cools to a safe 60° C, APC will return amp back to full power.

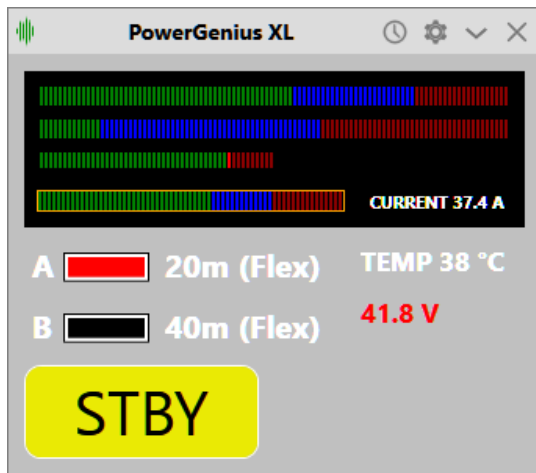√ Protection reacts in a time frame of about 1 μs to protect the amplifier from high VSWR and temperature.

Application Control

PowerGenius comes with a free, downloadable app that displays amplifier parameters on Windows® or Android™ devices.

√ Remote control with desktop app in LAN or WAN networks.

√ Seamlessly integrated with SmartSDR™ on FLEX-6000 Series radios.

PowerGenius XL SmartSDR panel showing the output power, the SWR and the temperature in real time.

PowerGenius XL Windows application showing connection screen when amp is connected and transmitting.

Technical Specifications

PA Specs:

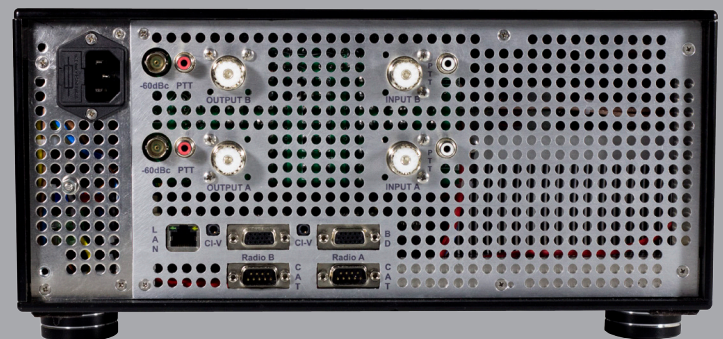|	
RF Power Output:	1500W (ICAS), 2000W Capable
Exciter Drive Level:	50W (US version)
Transistors:	NXP 1K50H x 2
Exciter Inputs*:	SO-239 x 2
Antenna Outputs:	SO-239 x 2
Antenna Impedance:	50 Ohm Unbalanced
Cooling:	Thermostatically Controlled Fans

Mechanical Specs:

Dimensions:	5"H x 13"W x 17"D
	13cm x 33cm x 43cm
Weight:	33 lbs (15Kg)
Operating Temp:	-25°C to +60°C

Electrical Specs:

Input Voltage**:	90 - 250VAC, 50/60 Hz
Power Supply:	Modular Internal Switching

* SO2R Configuration
** Maximum RF power output achieved using 220 VAC

About Sky Sat and FlexRadio Systems

FlexRadio Systems and Sky Sat / 403A have joined forces to bring you industry leading amateur solutions for your shack that provide cutting edge ways to operate both at your station and remotely. Be leveraging Sky Sat's Genius products with FlexRadio's FLEX-6000 with SmartSDR radio platform, we provide you with a fully integrated solution for your shack; making your operation cleaner and higher performing.

Contact Us
24 Hours, 7 Days a Week

FlexRadio Systems prides itself on its industry leading customer service in the amateur radio community. You can reach out to us for assistance with your radio through various channels, 24 hrs - 7 days a week. Support solutions include on-line HelpDesk, FlexRadio Community, phone, email support and much more. FlexRadio employees, as well as Flex Elmers, are always there to help make your experience with a FlexRadio the best it can be.

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Software Defined Radios

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