I-Tech Competitive Analysis
January 2007

Remote communication, monitoring, control method	Crown I-Tech 8000	Powersoft K10	LabGruppen FP 13000	Comments Why is this significant? What is the benefit?
Standard TCPIP Ethernet protocal 100MBPs HIQnet networking, compatible with standard Ethernet switches and routers	★			Ethernet communication is the only industry-standard method for professional products. 100mb Ethernet networks allow other 3rd party products to coexist on the same network. Ethernet networks lend themselves to "single click" solutions allowing both digital audio (CobraNet™) and control protocol to exist on the same CAT5 cable.
Wireless Ethernet network compatible with standard hardware	★			Wi-Fi system access is critical for live applications where audio techs can't rely on a fixed location and cable length for communication.
Serial communication bus (CAN bus, RS485, etc.) (Requires additional custom network hardware)		optional	★	Crown moved away from similar serial communications ($20m_a$ loop) in order to get network capable with TCPIP. Serial communication methods are not networks as they rely on point-to-point communication.

Output Power / Time				
1kHz published power spec, 4 ohms	4000W, >2S	4000W[1]	4400W[2]	Our industry lacks a uniform standard; however Crown has a track record for being the most conservative when it comes to power ratings. We feel that tests less than 1 sec. should be considered burst power.
1kHz published power spec, 2 ohms	3500W, >2S	6000W[1]	6500W[2]	Out industry lacks a uniform standard, however Crown has a track record for being the most conservative when it comes to power ratings. We feel that tests less than 1 sec. should be considered burst power.
20Hz published power spec, 4 ohms	4000W, >2S	not rated	not rated	20Hz-20kHz power ratings offer full spectrum power capability within rated THD specs. (not easy)
20Hz published power spec, 2 ohms	3500W, >2S	not rated	not rated	20Hz-20kHz power ratings offer full spectrum power capability within rated THD specs. (not easy)

[1]For 0.008 seconds. [2]Not shipping in USA. USA version of FP6400 made power for 0.022 seconds.

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Inputs and Outputs	Crown I-Tech 8000	Powersoft K10	LabGruppen FP 13000	Comments Why is this significant? What is the benefit?
Power cord	20A removable IEC connector, w/ lock	Powercon	Captive cord with 30A twist lock	Superior Class-I efficiency with energy recycling makes 20A cord possible, even in the USA
Gold-plated XLR inputs with passive loop through	★		★	Gold connections offer best conductivity
All-metal 50A Speakon outputs	★			Any amplifier that provides over 1800W at 2 ohms is capable of delivering over 30amps, and therefore capable of melting plastic connectors with inferior ratings (we've done it).
Plastic 30A Speakon outputs		★		We have found that this connector could melt due to its limited current capability.
100A 5-way gold-plated binding posts	★		★	Critical for high power installed sound applications relying on high current rated spade lugs.
AES/EBU digital audio input with analog backup and level trim	★			AES inputs keeps the signal path digital as far as possible. Standard with all I-Techs. I-Tech is the only product on the market to provide input redundancy D > A or A > D options.

Price and Weight				
MSRP, USD	$ 7,689.00	$ 7,995.00	$6650.00	I-Tech is the only complete system that includes an integrated digital network featureset, all for one price. When you compare all of I-Tech's features including dollars-per-watt, I-Tech's value can't be beat.
Weight (lb/kg)	28 lb/13 kg	26 lb/12 kg	26.2 lb/12 kg	The market has spoken loudly here. You must be lightweight and that seems to be approximately 30 lb. Or less.
Depth (inch / mm)	16.2"/411mm	18.7"/475mm	15.6"/396mm	We have found that any amplifier deeper than 17 inches requires non-standard racks

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Amplifier Section	Crown I-Tech 8000	Powersoft K10	LabGruppen FP 13000	Comments Why is this significant? What is the benefit?
Patented Class-I switching output stage with reactive energy recycling (3 global patents)	★			Class-I is the most efficient output topology in use today. It delivers more power while drawing less current. It plays louder than any other output stage and you can only get it from Crown. US Patent 5,657,219
Class AB linear output stage			★	This output stage is proven technology used in our “better” class amplifiers like XTi, CDi, and DSi. We do not consider it high enough performance for best-in-class products like I-Tech.
Class D switching output stage		★		Class D outputs are fundamentally voltage limited, whereas Class I can be used to build arbitrarily large amplifiers. I-Tech Class I is based on three different US and global patents.
Intercooler® heatsink			★	While these are claimed "proprietary", the same technology was used on MA5000VZ, launched in 1992.
Damping factor	>5000[1]	>5000	not rated	Crown has proven over and over that damping factor matters for tight low-end performance.

[1]US Patent 6,909,321

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Power Supply Section	Crown I-Tech 8000	Powersoft K10	LabGruppen FP 13000	Comments Why is this significant? What is the benefit?
Single-voltage power supply with 200V continuous available to amplifier stage	★			I-Tech's regulated power supply keeps all of the voltage available to the load, all of the time.
Class TD tracking power supply			★	Complicated high-frequency tracking power supplies often cause HF distortion.
Universal input (85-277V 50-60Hz) power supply with Power Factor Correction	★	★		Universal input simplifies operation, as you worry less about a country's nominal AC line voltage. It also improves tolerance of over/undervoltage conditions. PFC significanly reduces the amp's current draw and requires less PD (power distribution) on the road.
Country-specific power supply, non-universal			★	This can be costly and very inconvenient for international tour sound companies.
Achieves all rated specs at any mains voltage above 100VAC	★			No games! I-Tech is a Crown and that means it is conservatively rated, unlike others who require asterisks and footnotes.
Bridge Mode provides extra power vs. dual mode	★			The Powersoft and Lab Gruppen amplifiers have outputs that are already out of phase in dual mode and therefore offer no increase in power in bridge mode.

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Front-Panel Controls / Indicators	Crown I-Tech 8000	Powersoft K10	LabGruppen FP 13000	Comments Why is this significant? What is the benefit?
Front-panel LCD	★	★		A front panel LCD offers a fast way to configure an ampifier and monitor key features in real time without the use of a PC.
Comprehensive patent-pending amplifier control LCD with menu of options and 20 presets	★			Unlike the alternatives who only provide a very limited selection of configuration and diagnostics, I-Tech has a menu of choices with 3 categories for Basic, Advanced, and Monitoring.
Front-panel AC-mains presence indicator	★			Is the amp plugged in? Does the receptacle have adequate AC line voltage? An AC mains presence indicator can help with troubleshooting.
Comprehensive LED indicators for ready, signal presence, thermal, and fault	★		★	Front-panel indicators should offer a dashboard of information about the amp as a whole, not just signal strength.

Signal Processing / Loudspeaker Management				
24bit/96kHz floating point DSP	★	optional		Integrated into every amp, not an add-on accessory. I-Tech is a system, not an amp with DSP "tacked on"
Look-ahead peak voltage limiter with zero overshoot	★			Amp outputs never overshoot - limiter stops the amp before it can overshoot. No external speaker processor can do this.
Voltage Limiters		★	★	Non-DSP based limiters by definition allow amp to overshoot the voltage limit
Continuously adjustable input sensitivity	★			I-Tech offers 149 input sensitivity settings per channel in tenth of a dB increments. Powersoft and Lab Gruppen offer limited options with fewer settings.
Speed-dependent, front-panel Rotary Encoders for level and parameter adjustments	★			I-Tech user interface is patent-pending. Encoders allow fast and easy adjustment of complex features. You have to use them to understand them.
Adjustable delay from front panel (feet/meters/seconds)	★			Quick alignment of distributed systems and delay towers can be accomplished from the front panel without the use of a PC.

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Convenience Features	Crown I-Tech 8000	Powersoft K10	LabGruppen FP 13000	Comments Why is this significant? What is the benefit?
Configurable error reporting (network not required) Load Z thermal, clip	★			These are critical system-level events that are time coded and date stamped, and can be viewed either from the front panel, or more extensively in the error report file via System Architect and IQWic.
User-selectable bar meters in LCD (input level, output level, thermal status, and attenuator level)	★			These are flexible bar meters that offer a dashboard for I-Tech's input and output status.
Front-panel LED selectable peak/average response	★			This can help monitor dynamic changes in I-Tech's outputs, letting the operator compare between quick transients and continuous average.
Operating Hours indicator	★			The odometer! How old is your I-Tech?
Attenuator "Speed Limit" locks	★			Great simple way to resize your I-Tech and offer system protection.
Linkable attenuators	★			Simplifies changes made for dual mode applications where similar band passes and configurations are in use.
Push-to-mute rotary encoders	★			Key for fast tuning of stacks-n-racks. Great for channel by channel configurations.
Onboard pink noise generator	★			Eliminates the need for external source.
Me/You indicator	★			Fast way to identify individual amplifiers in a group via System Architect or IQWic.