



Praetorian® III **Architecture Announcement**



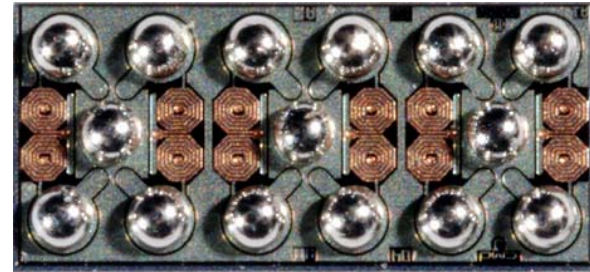
Summary

- Innovative inductor based EMI suppression for high speed parallel interfaces
- Lowers total capacitance, provides best in breed attenuation, and true ESD protection
- Permits higher cutoff frequencies and high digital signal integrity
- Available in current industry leading 0.4mm packaging formats, makes even smaller outlines available



Three Generations of *Praetorian* Inductor Based EMI Suppression

- *Praetorian I* → Five pole filter with spiral copper Inductors
- *Praetorian II* → Three pole filter for high data rate applications, price leadership
- *Praetorian III* → Innovative three to six pole filter, high cutoff frequencies, very fast rise times and → superior attenuation at an affordable price



Now



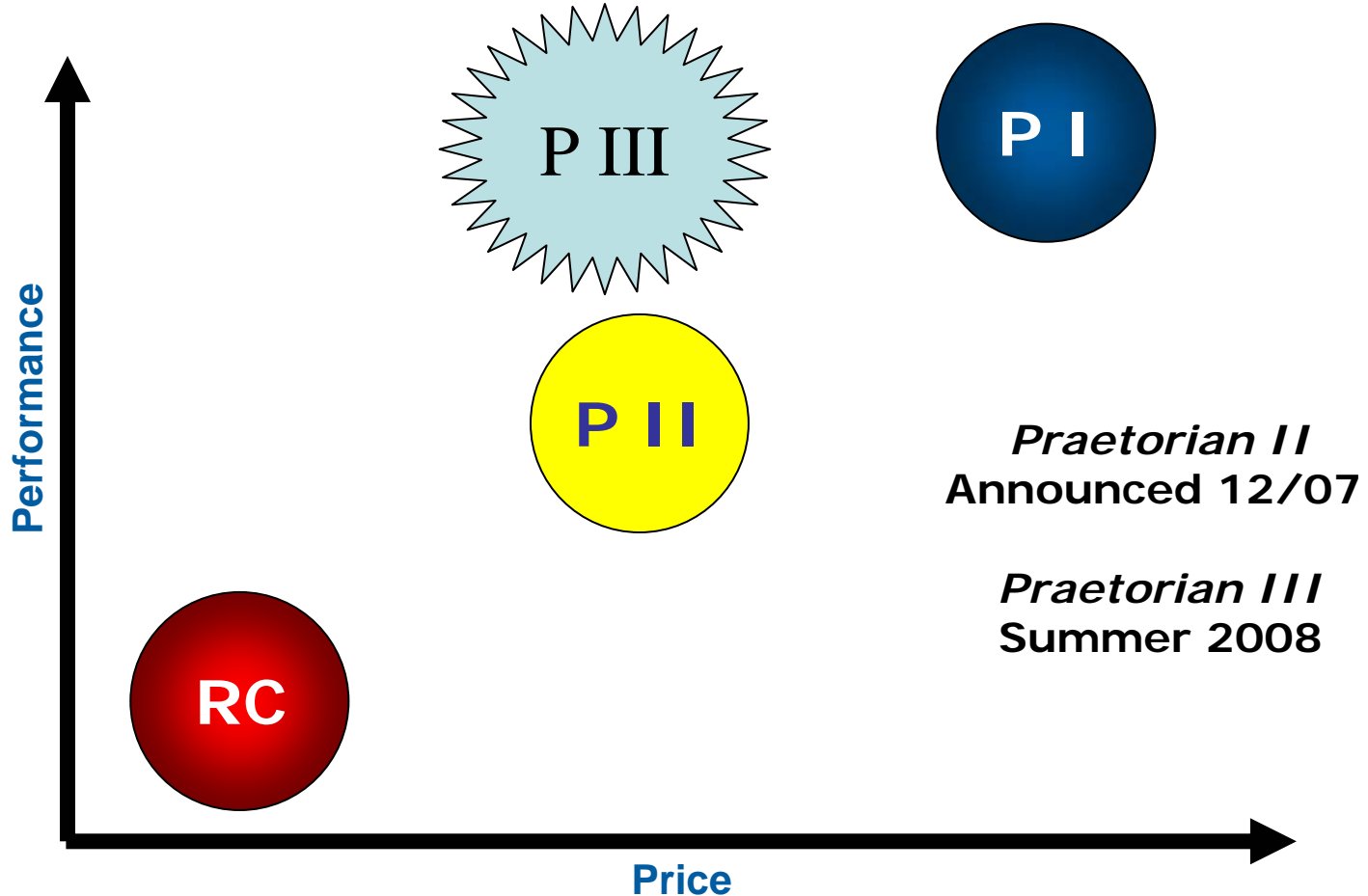
Next Generation *Praetorian* Technology

- Innovative approach of using coupled inductors as the resonant element in an LC EMI suppressor with integrated ESD protection
- Features
 - Lower Total Line Capacitance than previous *Praetorian* products, and 1/3 of comparable RC based products
 - Higher cutoff frequencies
 - Steeper attenuation slope
 - Close-in absolute attenuation
 - Streamlined production process, fewer processes, cost competitive
 - Available for packaging in <math><0.4\text{mm}</math> pitch WLCSP and uDFN



EMI Filter Leadership

Inductor Based Silicon Solutions





Praetorian III and Capacitance

- Lower capacitance allows for faster rise times than typical RC based low pass filters, and therefore better signal integrity
- Lower filter capacitance permits faster clock speeds and higher cutoff frequencies, important for:
 - Camera resolutions through 8 Megapixel
 - Removable memory modules capacity through 8 Gigabytes
 - Displays interfaces through wide VGA
- *Praetorian III* architecture offers lower total filter capacitance and guarantees up to 15 kV contact ESD protection



Praetorian III Attenuation Mask

- Inductor based EMI suppression solutions offer a much steeper attenuation slope, an important element in low pass filtering
- Steeper slopes create a more stable attenuation mask over device operating voltages
- Attenuation masks ranging from 700MHz- 6000 MHz with 400 MHz cutoff frequencies are now possible



Conclusion

- *Praetorian III* approach allows for higher cutoff frequencies and better signal integrity, an important concern of wireless device designers
- Attenuates at lower frequencies, creating a compelling low pass filter solution for newly available wireless protocols
- Continues to offer true ESD protection that does not degrade over time