

**IMPINJ<sup>®</sup>**

**MONZA<sup>®</sup>**

**AUTOTUNE TECHNOLOGY OVERVIEW**

## 1 WHAT IS AUTOTUNE?

AutoTune is a new feature in Impinj's Monza 6 family tag chips that tunes the chip's radio on every power-up to maximize tag sensitivity for the current environment.

All tags experience varying performance from application to application due, for example, to the differences in materials of the tagged items such as shirts, jeans and polybags; or due to different operating frequencies in US and Europe. Currently, tag manufacturers take these factors into account either by increasing tag size or by carrying multiple application-specific tag designs. AutoTune compensates for these factors, allowing smaller tags or tags that can be used in more applications. Best of all, AutoTune does not require any user intervention or custom commands. AutoTune is fully automatic and works all the time.

Every tag has a range of frequencies over which it offers the best readability. A tag's bandwidth is the width of this frequency range. AutoTune increases a tag's bandwidth. Wideband tags are more tolerant of tag-manufacturing variations, differences in materials of the tagged items and environmental variations (such as from store fixtures) than narrowband tags. AutoTune reduces tag SKU count throughout the supply chain, reducing complexity and cost. AutoTune also improves tag readability in retail stores and opens new item categories for retail tagging that require small tags.

AutoTune is Impinj's patented technology and available only in Monza tag chips.

## 2 FREQUENTLY ASKED QUESTIONS

### **Will AutoTune slow down my read/write process?**

No. AutoTune does its tuning during tag power-up.

### **How does AutoTune affect my tag antenna design?**

AutoTune enables you to design smaller tags with improved sensitivity and/or wider bandwidth. It can reduce off-tuning from dielectric loading.

### **Can I disable AutoTune?**

Yes. You may disable AutoTune using a Gen2-compliant write to a memory location outlined in the Monza 6 datasheet.

### **How do I know what tuning value AutoTune chose?**

If you are an antenna designer and want to check the tuning value, you can do so using a Gen2-compliant read of a memory location outlined in the Monza 6 datasheet.

### **Do I need to buy new readers to use AutoTune?**

No. AutoTune does not require new equipment or any changes to existing reader infrastructures. AutoTune just works, invisibly and automatically.

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