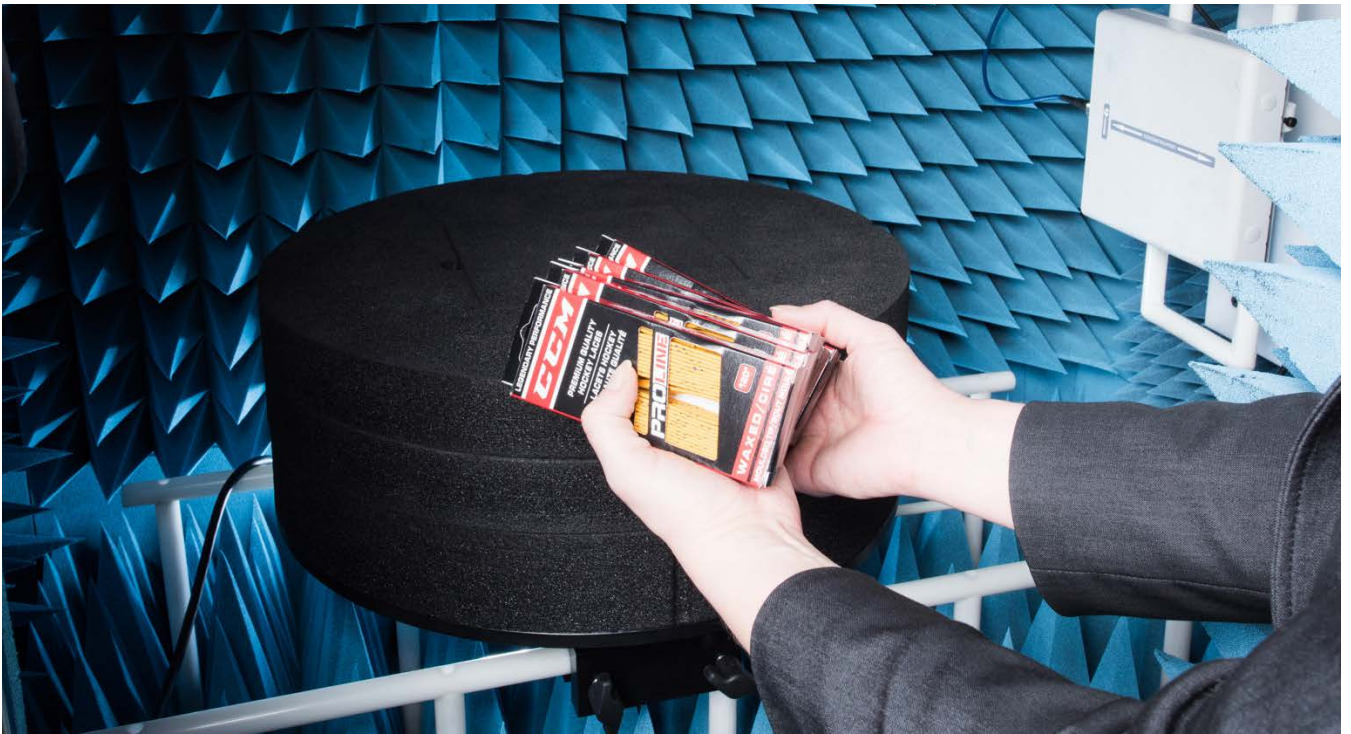GS1 ®

Tagged-Item
Performance Protocol (TIPP)

RFID tagging guidelines

TIPP-provided grades specify predictable performance levels based on environmental conditions like the store setting, product packaging and tag orientation to the reader.

Achieving Predictable Performance

The use of RFID tags keeps growing. In fact, 2017 promises to be another banner year. Consider that nearly 8 billion RFID tags are projected for purchase in 2017, compared to 3 billion in 2014.[1] Yet, when is comes to RFID tagging deployments, it's not the volume of tags that concerns trading partners—it's how well these tags perform.

Historically, retailers have conducted their own RFID performance testing and set their own individual expectations for tag inlay solutions that are used to tag products destined for their stores. This required suppliers to provide different solutions for different retailers. In addition to putting undue operational costs and constraints on suppliers, this approach also leads to duplicate efforts among the many retailers, suppliers and logistics companies that need to track goods via RFID tagging.

Today, the GS1 Tagged-Item Performance Protocol (TIPP) offers a viable, simplified solution.

Making the grade

Developed by retailers, suppliers and technology solution partners, the GS1 TIPP is a global guideline for RFID tag performance. It offers a standardised system to grade and benchmark the performance of RFID-tagged items in multiple environments.
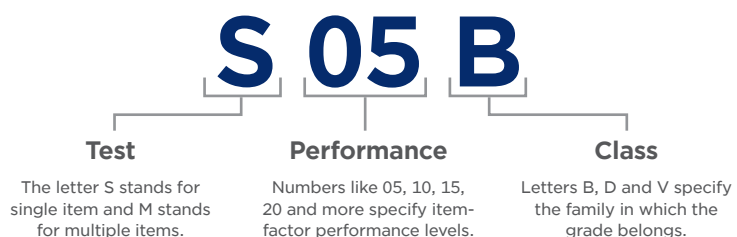
TIPP-provided grades specify predictable performance levels based on environmental conditions like the store setting, product packaging and tag orientation to the reader. Grades offer a standard way for retailers to communicate their RFID tagging requirements to suppliers and solution partners, giving all trading partners an effective way to communicate about performance expectations.

Retailers are able to set performance levels independently as well as select categories and use cases, and continually monitor tagged-item performance. For example, due to the way an item is presented in different retailers' stores (e.g., folded and stacked on a table versus hanging), a specific item may need a higher grade for this retailer compared to others.

Take a closer look at TIPP grades

TIPP grades contain the relevant performance factors—orientation, sensitivity and backscatter power—for an RFID-tagged item in a retail environment. Within the same test scenario and class, higher numbers indicate higher performance. Grades are verifiable and independent of product category or use case.

Here is an example of a grade name and what each letter or number represents. An optional fourth component specifies the frequency restriction for the grade.

S 05 B

Test

The letter S stands for single item and M stands for multiple items.

Performance

Numbers like 05, 10, 15, 20 and more specify item-factor performance levels.

Class

Letters B, D and V specify the family in which the grade belongs.

Suppliers are able to combine requirements from multiple retailers and continually verify tagged-item performance. For example, if one retailer requires a higher grade for a specific item than another retailer, the supplier may choose to use this higher grade for all instances of that item, thus eliminating the need to implement two different processes to apply two different grades of tags. This adds up to increased efficiencies as well as reduced time and costs.

The GS1 TIPP guideline also helps retailers, suppliers and solution partners alike share the results of their grade-based performance testing for the benefit of others. Working together with GS1, retailers can develop new standardised grades and test configurations that meet their tagging requirements for new product categories, differing field environments and advanced business challenges.

> TIPP enables suppliers to combine requirements from multiple retailers and continually verify tagged-item performance, thus eliminating the need for different processes to apply different grades of tags.
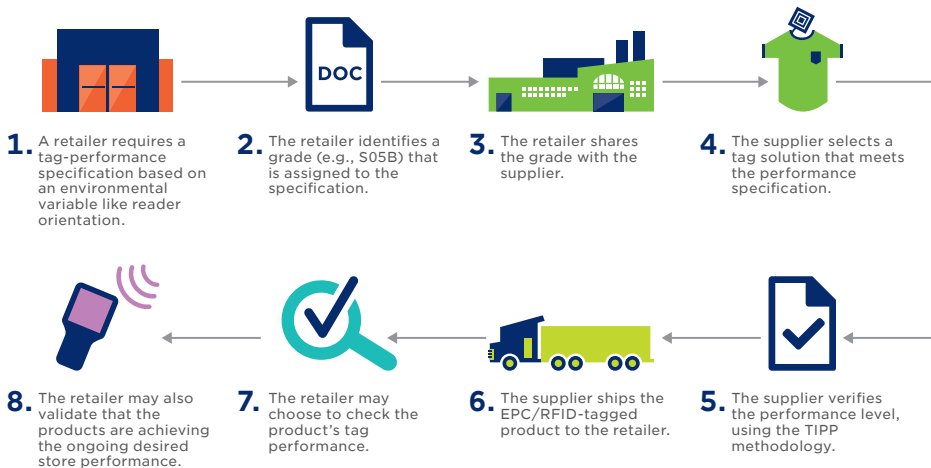
Everyone wins

By using TIPP, retailers can significantly simplify and speed RFID tagging deployments. It practically eliminates the need for in-store tag performance tests along with the associated resources, time and expense. Retailers can precisely and easily communicate performance requirements by simply selecting a grade, thereby enabling their suppliers to achieve and maintain high RFID tag performance in various retail environments.

TIPP provides suppliers with repeatable testing protocol to ensure their tagged products meet each retailer's performance requirements. Suppliers get various options on how they can meet the tagged-product performance levels set by retailers. With this greater flexibility, suppliers can optimise production processes, leverage common requirements from multiple retailers and potentially drive down the cost per tag. In short, it allows them to focus on quality, innovation and rapid solution development.

TIPP can be a highly useful tool for solution partners, such as tag suppliers and systems integrators, who may be responsible for ensuring tag performance for their customers. The guideline gives them the well-established framework needed to develop better products and services that improve the reliability and data integrity of tagged-item performance throughout the supply chain.

How does TIPP work?

1. A retailer requires a tag-performance specification based on an environmental variable like reader orientation.

2. The retailer identifies a grade (e.g., S05B) that is assigned to the specification.

3. The retailer shares the grade with the supplier.

4. The supplier selects a tag solution that meets the performance specification.

5. The supplier verifies the performance level, using the TIPP methodology.

6. The supplier ships the EPC/RFID-tagged product to the retailer.

7. The retailer may choose to check the product's tag performance.

8. The retailer may also validate that the products are achieving the ongoing desired store performance.

TIPP provides solution partners with the performance criteria needed to develop products and services that increase the speed and efficiency of RFID deployments.

Get started today

Greater inventory accuracy, improved point-of-sale transactions, decreased out-of-stock occurrences, improved loss detection, higher conversion rates, expedited returns—the list of benefits goes on-and-on for retailers and suppliers using RFID tagging. And since TIPP helps ensure smoother, faster deployments, all trading partners can more quickly experience these clear benefits.

Let TIPP help you achieve predictable performance in RFID tagging and experience its many benefits for your business.

Learn more about TIPP by reading Tagged-Item Performance Protocol (TIPP) Guideline.

Contact your local GS1 Member Organisation with questions or comments about the TIPP Guideline. Visit www.gs1.org/contact.

About GS1 and RAIN RFID Alliance

GS1 and RAIN RFID Alliance are working together to accelerate awareness and adoption of UHF RFID technology including implementations that use the EPC numbering system. The RAIN Alliance is a global organisation promoting the adoption of RAIN technology solutions across many different vertical markets.

About GS1

GS1 is a neutral, not-for-profit, global organisation that develops and maintains the most widely used supply chain standards system in the world. GS1 standards improve the efficiency, safety, and visibility of supply chains across multiple sectors. With local Member Organisations in over 110 countries, GS1 engages with communities of trading partners, industry organisations, governments, and technology providers to understand and respond to their business needs through the adoption and implementation of global standards. GS1 is driven by over a million user companies, which execute more than six billion transactions daily in 150 countries using GS1 standards. More information at www.gs1.org.

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[1] Cybra Corporation, "5 Huge RFID Statistics for 2017," https://cybra.com/5-huge-rfid-statistics-for-2017/